

Review of Equations

Date_____ Period_____

Solve each equation.

1) $3n + 4n = -14$

2) $9 = -7m + 1 - 6$

3) $-24 = 5r + 3r$

4) $-6x - 6x = 12$

5) $-36 = 6(2 - 8n)$

6) $-6 + 5(-1 - b) = 19$

7) $-14 = -(-2x + 2)$

8) $51 = 7(-1 + 2v) + 2$

9) $7(1 + 5n) + 6(1 + 4n) = 13$

10) $73 = -6(k - 7) + 6(k + 5)$

11) $-6(3 - 3a) - 8(6a + 5) = 32$

12) $-9 + 4r = 4r - 3 - 6$

13) $6x - 2x + 8 = x + 5$

14) $4n + 5n + 15 = 5n + 7n$

$$15) 4m + 3 = 13 - m$$

$$16) 5p + 5 = 4 + 4p$$

$$17) 8 + 6x = 8 + 8x + 7 + 3$$

$$18) -5b + 24 = -8(b - 6) + 6b$$

$$19) 3(7r - 7) = -6 + 6r$$

$$20) -(1 - 5x) + 8 = -17 + 2x$$

$$21) -5n - 4(-7 - 4n) = 36 + 7n$$

$$22) 2(-7a + 6) = -16 - 7a$$

$$23) -8(2 + 7n) = -6n + 34$$

$$24) -7(x + 3) = -2(x + 3) - 5x$$

$$25) -4(v - 2) = -4(v - 8) - 8v$$

$$26) 2(x + 8) = -3(x + 3)$$

$$27) -7(-1 + 3a) = 5(3 - 5a)$$

$$28) 4k + 7(-4 - 2k) = -2(k - 2)$$

Review of Equations

Date _____ Period _____

Solve each equation.

1) $3n + 4n = -14$

$\{-2\}$

2) $9 = -7m + 1 - 6$

$\{-2\}$

3) $-24 = 5r + 3r$

$\{-3\}$

4) $-6x - 6x = 12$

$\{-1\}$

5) $-36 = 6(2 - 8n)$

$\{1\}$

6) $-6 + 5(-1 - b) = 19$

$\{-6\}$

7) $-14 = -(-2x + 2)$

$\{-6\}$

8) $51 = 7(-1 + 2v) + 2$

$\{4\}$

9) $7(1 + 5n) + 6(1 + 4n) = 13$

$\{0\}$

10) $73 = -6(k - 7) + 6(k + 5)$

No solution.

11) $-6(3 - 3a) - 8(6a + 5) = 32$

$\{-3\}$

12) $-9 + 4r = 4r - 3 - 6$

{ All real numbers. }

13) $6x - 2x + 8 = x + 5$

$\{-1\}$

14) $4n + 5n + 15 = 5n + 7n$

$\{5\}$

$$15) 4m + 3 = 13 - m$$

{2}

$$16) 5p + 5 = 4 + 4p$$

{-1}

$$17) 8 + 6x = 8 + 8x + 7 + 3$$

{-5}

$$18) -5b + 24 = -8(b - 6) + 6b$$

{-8}

$$19) 3(7r - 7) = -6 + 6r$$

{1}

$$20) -(1 - 5x) + 8 = -17 + 2x$$

{-8}

$$21) -5n - 4(-7 - 4n) = 36 + 7n$$

{2}

$$22) 2(-7a + 6) = -16 - 7a$$

{4}

$$23) -8(2 + 7n) = -6n + 34$$

{-1}

$$24) -7(x + 3) = -2(x + 3) - 5x$$

No solution.

$$25) -4(v - 2) = -4(v - 8) - 8v$$

{3}

$$26) 2(x + 8) = -3(x + 3)$$

{-5}

$$27) -7(-1 + 3a) = 5(3 - 5a)$$

{2}

$$28) 4k + 7(-4 - 2k) = -2(k - 2)$$

{-4}

Simplifying Square Roots

Date _____ Period _____

Simplify.

1) $\sqrt{96}$

2) $\sqrt{216}$

3) $\sqrt{98}$

4) $\sqrt{18}$

5) $\sqrt{72}$

6) $\sqrt{144}$

7) $\sqrt{45}$

8) $\sqrt{175}$

9) $\sqrt{343}$

10) $\sqrt{12}$

11) $10\sqrt{96}$

12) $9\sqrt{245}$

13) $7\sqrt{600}$

14) $5\sqrt{45}$

15) $5\sqrt{180}$

16) $3\sqrt{405}$

17) $2\sqrt{36}$

18) $9\sqrt{125}$

19) $8\sqrt{27}$

20) $12\sqrt{1764}$

21) $3\sqrt{900}$

22) $7\sqrt{2535}$

23) $11\sqrt{1215}$

24) $2\sqrt{200}$

Simplifying Square Roots

Date _____ Period _____

Simplify.

1) $\sqrt{96}$
 $4\sqrt{6}$

2) $\sqrt{216}$
 $6\sqrt{6}$

3) $\sqrt{98}$
 $7\sqrt{2}$

4) $\sqrt{18}$
 $3\sqrt{2}$

5) $\sqrt{72}$
 $6\sqrt{2}$

6) $\sqrt{144}$
 12

7) $\sqrt{45}$
 $3\sqrt{5}$

8) $\sqrt{175}$
 $5\sqrt{7}$

9) $\sqrt{343}$
 $7\sqrt{7}$

10) $\sqrt{12}$
 $2\sqrt{3}$

11) $10\sqrt{96}$
 $40\sqrt{6}$

12) $9\sqrt{245}$
 $63\sqrt{5}$

13) $7\sqrt{600}$
 $70\sqrt{6}$

14) $5\sqrt{45}$
 $15\sqrt{5}$

15) $5\sqrt{180}$
 $30\sqrt{5}$

16) $3\sqrt{405}$
 $27\sqrt{5}$

17) $2\sqrt{36}$
 12

18) $9\sqrt{125}$
 $45\sqrt{5}$

19) $8\sqrt{27}$
 $24\sqrt{3}$

20) $12\sqrt{1764}$
 504

21) $3\sqrt{900}$
 90

22) $7\sqrt{2535}$
 $91\sqrt{15}$

23) $11\sqrt{1215}$
 $99\sqrt{15}$

24) $2\sqrt{200}$
 $20\sqrt{2}$

Adding Square Roots

Date _____ Period _____

Simplify.

1) $-5\sqrt{6} - 2\sqrt{6}$

2) $-3\sqrt{5} + 2\sqrt{5}$

3) $-4\sqrt{3} + 3\sqrt{3}$

4) $-3\sqrt{6} - 4\sqrt{6}$

5) $-4\sqrt{10} + 5\sqrt{10}$

6) $-\sqrt{6} - 2\sqrt{6}$

7) $-\sqrt{7} - 5\sqrt{7}$

8) $-\sqrt{10} - 5\sqrt{10}$

9) $-3\sqrt{24} - 3\sqrt{2} + 2\sqrt{2}$

10) $-3\sqrt{45} - \sqrt{5} + 2\sqrt{2}$

11) $-\sqrt{18} - \sqrt{6} + 2\sqrt{2}$

12) $-3\sqrt{12} - 2\sqrt{27} - 2\sqrt{45}$

13) $-\sqrt{5} + 3\sqrt{5} + 2\sqrt{45}$

14) $-2\sqrt{54} - 3\sqrt{6} + 2\sqrt{54}$

15) $3\sqrt{8} + 2\sqrt{27} + 3\sqrt{3}$

16) $3\sqrt{54} - 3\sqrt{45} + 3\sqrt{45}$

17) $2\sqrt{12} + 3\sqrt{45} + 3\sqrt{3}$

18) $-2\sqrt{27} - \sqrt{54} - \sqrt{54}$

19) $4\sqrt{72} + 4\sqrt{128} - \sqrt{96} + 4\sqrt{8}$

20) $-3\sqrt{5} + 3\sqrt{112} + 4\sqrt{27} + 2\sqrt{45}$

21) $3\sqrt{72} - 3\sqrt{72} - 2\sqrt{6} + 4\sqrt{7}$

22) $-3\sqrt{7} - 2\sqrt{8} - 4\sqrt{6} - 2\sqrt{8}$

Adding Square Roots

Date _____ Period _____

Simplify.

$$1) -5\sqrt{6} - 2\sqrt{6}$$
$$-7\sqrt{6}$$

$$3) -4\sqrt{3} + 3\sqrt{3}$$
$$-\sqrt{3}$$

$$5) -4\sqrt{10} + 5\sqrt{10}$$
$$\sqrt{10}$$

$$7) -\sqrt{7} - 5\sqrt{7}$$
$$-6\sqrt{7}$$

$$9) -3\sqrt{24} - 3\sqrt{2} + 2\sqrt{2}$$
$$-6\sqrt{6} - \sqrt{2}$$

$$11) -\sqrt{18} - \sqrt{6} + 2\sqrt{2}$$
$$-\sqrt{2} - \sqrt{6}$$

$$13) -\sqrt{5} + 3\sqrt{5} + 2\sqrt{45}$$
$$8\sqrt{5}$$

$$15) 3\sqrt{8} + 2\sqrt{27} + 3\sqrt{3}$$
$$6\sqrt{2} + 9\sqrt{3}$$

$$17) 2\sqrt{12} + 3\sqrt{45} + 3\sqrt{3}$$
$$7\sqrt{3} + 9\sqrt{5}$$

$$19) 4\sqrt{72} + 4\sqrt{128} - \sqrt{96} + 4\sqrt{8}$$
$$64\sqrt{2} - 4\sqrt{6}$$

$$21) 3\sqrt{72} - 3\sqrt{72} - 2\sqrt{6} + 4\sqrt{7}$$
$$-2\sqrt{6} + 4\sqrt{7}$$

$$2) -3\sqrt{5} + 2\sqrt{5}$$
$$-\sqrt{5}$$

$$4) -3\sqrt{6} - 4\sqrt{6}$$
$$-7\sqrt{6}$$

$$6) -\sqrt{6} - 2\sqrt{6}$$
$$-3\sqrt{6}$$

$$8) -\sqrt{10} - 5\sqrt{10}$$
$$-6\sqrt{10}$$

$$10) -3\sqrt{45} - \sqrt{5} + 2\sqrt{2}$$
$$-10\sqrt{5} + 2\sqrt{2}$$

$$12) -3\sqrt{12} - 2\sqrt{27} - 2\sqrt{45}$$
$$-12\sqrt{3} - 6\sqrt{5}$$

$$14) -2\sqrt{54} - 3\sqrt{6} + 2\sqrt{54}$$
$$-3\sqrt{6}$$

$$16) 3\sqrt{54} - 3\sqrt{45} + 3\sqrt{45}$$
$$9\sqrt{6}$$

$$18) -2\sqrt{27} - \sqrt{54} - \sqrt{54}$$
$$-6\sqrt{3} - 6\sqrt{6}$$

$$20) -3\sqrt{5} + 3\sqrt{112} + 4\sqrt{27} + 2\sqrt{45}$$
$$3\sqrt{5} + 12\sqrt{7} + 12\sqrt{3}$$

$$22) -3\sqrt{7} - 2\sqrt{8} - 4\sqrt{6} - 2\sqrt{8}$$
$$-3\sqrt{7} - 8\sqrt{2} - 4\sqrt{6}$$

Multiplying Square Roots

Date _____ Period _____

Simplify.

1) $\sqrt{5} \cdot \sqrt{5}$

2) $\sqrt{10} \cdot \sqrt{2}$

3) $\sqrt{8} \cdot \sqrt{8}$

4) $\sqrt{20} \cdot \sqrt{10}$

5) $\sqrt{3} \cdot \sqrt{3}$

6) $\sqrt{5} \cdot \sqrt{12}$

7) $2\sqrt{2} \cdot \sqrt{12}$

8) $\sqrt{5} \cdot 2\sqrt{2}$

9) $\sqrt{6} \cdot -2\sqrt{6}$

10) $\sqrt{2} \cdot -2\sqrt{5}$

11) $\sqrt{6} \cdot -\sqrt{9}$

12) $\sqrt{5} \cdot -5\sqrt{5}$

13) $\sqrt{15}(\sqrt{3} + 2)$

14) $\sqrt{6}(\sqrt{2} + \sqrt{3})$

15) $\sqrt{10}(\sqrt{10} + 2)$

16) $\sqrt{5}(\sqrt{5} + 3)$

17) $\sqrt{5}(5 + \sqrt{5})$

18) $\sqrt{15}(\sqrt{3} + \sqrt{10})$

19) $-5\sqrt{3}(2 + \sqrt{5})$

20) $\sqrt{3}(5 + \sqrt{2})$

21) $\sqrt{10}(4\sqrt{2} + \sqrt{5})$

22) $3\sqrt{6}(\sqrt{10} - \sqrt{3})$

23) $-4\sqrt{5}(4 - 3\sqrt{10})$

24) $\sqrt{5}(-4\sqrt{6} + \sqrt{10})$

Multiplying Square Roots

Date _____ Period _____

Simplify.

1) $\sqrt{5} \cdot \sqrt{5}$
 5

2) $\sqrt{10} \cdot \sqrt{2}$
 $2\sqrt{5}$

3) $\sqrt{8} \cdot \sqrt{8}$
 8

4) $\sqrt{20} \cdot \sqrt{10}$
 $10\sqrt{2}$

5) $\sqrt{3} \cdot \sqrt{3}$
 3

6) $\sqrt{5} \cdot \sqrt{12}$
 $2\sqrt{15}$

7) $2\sqrt{2} \cdot \sqrt{12}$
 $4\sqrt{6}$

8) $\sqrt{5} \cdot 2\sqrt{2}$
 $2\sqrt{10}$

9) $\sqrt{6} \cdot -2\sqrt{6}$
 -12

10) $\sqrt{2} \cdot -2\sqrt{5}$
 $-2\sqrt{10}$

11) $\sqrt{6} \cdot -\sqrt{9}$
 $-3\sqrt{6}$

12) $\sqrt{5} \cdot -5\sqrt{5}$
 -25

13) $\sqrt{15}(\sqrt{3} + 2)$
 $3\sqrt{5} + 2\sqrt{15}$

14) $\sqrt{6}(\sqrt{2} + \sqrt{3})$
 $2\sqrt{3} + 3\sqrt{2}$

15) $\sqrt{10}(\sqrt{10} + 2)$
 $10 + 2\sqrt{10}$

16) $\sqrt{5}(\sqrt{5} + 3)$
 $5 + 3\sqrt{5}$

17) $\sqrt{5}(5 + \sqrt{5})$
 $5\sqrt{5} + 5$

18) $\sqrt{15}(\sqrt{3} + \sqrt{10})$
 $3\sqrt{5} + 5\sqrt{6}$

19) $-5\sqrt{3}(2 + \sqrt{5})$
 $-10\sqrt{3} - 5\sqrt{15}$

20) $\sqrt{3}(5 + \sqrt{2})$
 $5\sqrt{3} + \sqrt{6}$

21) $\sqrt{10}(4\sqrt{2} + \sqrt{5})$
 $8\sqrt{5} + 5\sqrt{2}$

22) $3\sqrt{6}(\sqrt{10} - \sqrt{3})$
 $6\sqrt{15} - 9\sqrt{2}$

23) $-4\sqrt{5}(4 - 3\sqrt{10})$
 $-16\sqrt{5} + 60\sqrt{2}$

24) $\sqrt{5}(-4\sqrt{6} + \sqrt{10})$
 $-4\sqrt{30} + 5\sqrt{2}$

Dividing and Square Roots

Date_____ Period_____

Simplify.

$$1) \frac{\sqrt{3}}{\sqrt{48}}$$

$$2) \frac{\sqrt{12}}{\sqrt{4}}$$

$$3) \frac{\sqrt{20}}{\sqrt{5}}$$

$$4) \frac{\sqrt{8}}{\sqrt{100}}$$

$$5) \frac{\sqrt{15}}{\sqrt{125}}$$

$$6) \frac{\sqrt{6}}{\sqrt{8}}$$

$$7) \frac{4\sqrt{6}}{3\sqrt{8}}$$

$$8) \frac{2\sqrt{3}}{4\sqrt{27}}$$

$$9) \frac{2\sqrt{3}}{2\sqrt{12}}$$

$$10) \frac{4\sqrt{6}}{4\sqrt{27}}$$

$$11) \frac{3\sqrt{20}}{4\sqrt{16}}$$

$$12) \frac{3\sqrt{20}}{3\sqrt{36}}$$

$$13) \frac{\sqrt{25}}{\sqrt{15}}$$

$$14) \frac{\sqrt{5}}{\sqrt{15}}$$

$$15) \frac{\sqrt{10}}{\sqrt{6}}$$

$$16) \frac{\sqrt{15}}{\sqrt{6}}$$

$$17) \frac{\sqrt{8}}{\sqrt{6}}$$

$$18) \frac{\sqrt{6}}{\sqrt{15}}$$

$$19) \frac{3\sqrt{3}}{\sqrt{5}}$$

$$20) \frac{3\sqrt{3}}{5\sqrt{2}}$$

$$21) \frac{4}{3\sqrt{5}}$$

$$22) \frac{2\sqrt{2}}{2\sqrt{3}}$$

$$23) \frac{5\sqrt{4}}{\sqrt{5}}$$

$$24) \frac{3\sqrt{5}}{2\sqrt{2}}$$

Dividing and Square Roots

Date _____ Period _____

Simplify.

$$1) \frac{\sqrt{3}}{\sqrt{48}}$$
$$\frac{1}{4}$$

$$2) \frac{\sqrt{12}}{\sqrt{4}}$$
$$\sqrt{3}$$

$$3) \frac{\sqrt{20}}{\sqrt{5}}$$
$$2$$

$$4) \frac{\sqrt{8}}{\sqrt{100}}$$
$$\frac{\sqrt{2}}{5}$$

$$5) \frac{\sqrt{15}}{\sqrt{125}}$$
$$\frac{\sqrt{3}}{5}$$

$$6) \frac{\sqrt{6}}{\sqrt{8}}$$
$$\frac{\sqrt{3}}{2}$$

$$7) \frac{4\sqrt{6}}{3\sqrt{8}}$$
$$\frac{2\sqrt{3}}{3}$$

$$8) \frac{2\sqrt{3}}{4\sqrt{27}}$$
$$\frac{1}{6}$$

$$9) \frac{2\sqrt{3}}{2\sqrt{12}}$$
$$\frac{1}{2}$$

$$10) \frac{4\sqrt{6}}{4\sqrt{27}}$$
$$\frac{\sqrt{2}}{3}$$

$$11) \frac{3\sqrt{20}}{4\sqrt{16}}$$
$$\frac{3\sqrt{5}}{8}$$

$$12) \frac{3\sqrt{20}}{3\sqrt{36}}$$
$$\frac{\sqrt{5}}{3}$$

$$13) \frac{\sqrt{25}}{\sqrt{15}}$$
$$\frac{\sqrt{15}}{3}$$

$$14) \frac{\sqrt{5}}{\sqrt{15}}$$
$$\frac{\sqrt{3}}{3}$$

$$15) \frac{\sqrt{10}}{\sqrt{6}}$$
$$\frac{\sqrt{15}}{3}$$

$$16) \frac{\sqrt{15}}{\sqrt{6}}$$
$$\frac{\sqrt{10}}{2}$$

$$17) \frac{\sqrt{8}}{\sqrt{6}}$$
$$\frac{2\sqrt{3}}{3}$$

$$18) \frac{\sqrt{6}}{\sqrt{15}}$$
$$\frac{\sqrt{10}}{5}$$

$$19) \frac{3\sqrt{3}}{\sqrt{5}}$$
$$\frac{3\sqrt{15}}{5}$$

$$20) \frac{3\sqrt{3}}{5\sqrt{2}}$$
$$\frac{3\sqrt{6}}{10}$$

$$21) \frac{4}{3\sqrt{5}}$$
$$\frac{4\sqrt{5}}{15}$$

$$22) \frac{2\sqrt{2}}{2\sqrt{3}}$$
$$\frac{\sqrt{6}}{3}$$

$$23) \frac{5\sqrt{4}}{\sqrt{5}}$$
$$2\sqrt{5}$$

$$24) \frac{3\sqrt{5}}{2\sqrt{2}}$$
$$\frac{3\sqrt{10}}{4}$$

Line Segments and Measure

Date _____ Period _____

Use a ruler to measure the length of each line segment. Measure each segment in inches. Round your measurements to the nearest $\frac{1}{8}$ of an inch.

1) 

2) 

3) 

4) 

5) 

6) 

7) 

8) 

9) 

10) 

11) 

12) 

13) 

14) 

Use a ruler to measure the length of each line segment. Measure each segment in inches. Round your measurements to the nearest $\frac{1}{8}$ of an inch. Also state the maximum error and maximum percent of error in each measurement.

15)



16)



17)



18)



19)



20)



Critical thinking questions:

21) Jessica measures a line segment to the nearest $\frac{1}{8}$ of an inch. She calculates that her measurement has up to 0.1% error in it.

22) What is the minimum error and minimum percent error in Jessica's measurement?


What measure did she find for the line segment?


Line Segments and Measure


Date _____ Period _____

Use a ruler to measure the length of each line segment. Measure each segment in inches. Round your measurements to the nearest $\frac{1}{8}$ of an inch.

1) 
3"

2) 
 $\frac{3}{4}$ "


3) 
 $1\frac{1}{4}$ "

4) 
 $1\frac{5}{8}$ "

5) 
 $2\frac{3}{8}$ "

6) 
2"

7) 
 $2\frac{7}{8}$ "

8) 
 $\frac{5}{8}$ "

9) 
 $5\frac{3}{4}$ "

10) 
 $6\frac{1}{8}$ "

11) 
 $4\frac{1}{2}$ "

12) 
7"

13) 
 $4\frac{1}{8}$ "

14) 
 $3\frac{3}{4}$ "

Use a ruler to measure the length of each line segment. Measure each segment in inches. Round your measurements to the nearest $\frac{1}{8}$ of an inch. Also state the maximum error and maximum percent of error in each measurement.

15)



$$2\frac{5}{8}'' , \frac{1}{16}'' , 2.4\%$$

16)



$$\frac{1}{2}'' , \frac{1}{16}'' , 12.5\%$$

17)



$$\frac{7}{8}'' , \frac{1}{16}'' , 7.1\%$$

18)



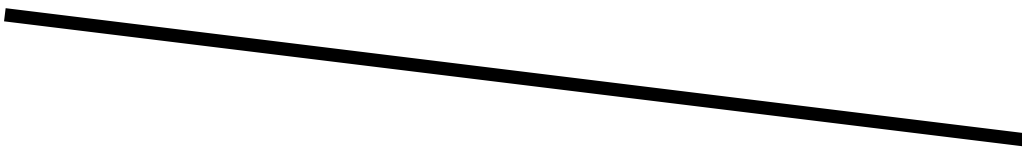
$$1\frac{1}{4}'' , \frac{1}{16}'' , 5\%$$

19)



$$4\frac{7}{8}'' , \frac{1}{16}'' , 1.3\%$$

20)



$$5\frac{3}{8}'' , \frac{1}{16}'' , 1.2\%$$

Critical thinking questions:

21) Jessica measures a line segment to the nearest $\frac{1}{8}$ of an inch. She calculates that her measurement has up to 0.1% error in it.

What measure did she find for the line segment?

$$62\frac{1}{2}''$$

22) What is the minimum error and minimum percent error in Jessica's measurement?

0" error; 0% error

Line Segments and Measure

Date _____ Period _____

Use a ruler to measure the length of each line segment. Measure each segment in centimeters. Round your measurements to the nearest millimeter.

1) _____

2) 

3) 

4) 

5) 

6) 

7) 

8) 

9) 

10) 

11) 

12) 

13) 

14) 

Use a ruler to measure the length of each line segment. Measure each segment in centimeters. Round your measurements to the nearest millimeter. Also state the maximum error and maximum percent of error in each measurement.

15) 

16) 

17) 

18) 

19) 

20) 

Critical thinking questions:

21) Jessica measures a line segment to the nearest millimeter. She calculates that her measurement has up to 0.2% error in it.

What measurement did she find for the line segment?

22) What is the minimum error and minimum percent error in Jessica's measurement?

Line Segments and Measure

Date _____ Period _____

Use a ruler to measure the length of each line segment. Measure each segment in centimeters. Round your measurements to the nearest millimeter.

1) _____

3.2 cm

2) _____

3.5 cm

3) _____

3.9 cm

4) _____

4.2 cm

5) _____

4.5 cm

6) _____

4.8 cm

7) _____

5.2 cm

8) _____

5.5 cm

9) _____

13.7 cm

10) _____

14 cm

11) _____

14.4 cm

12) _____

14.7 cm

13) _____

15 cm

14) _____

15.3 cm

Use a ruler to measure the length of each line segment. Measure each segment in centimeters. Round your measurements to the nearest millimeter. Also state the maximum error and maximum percent of error in each measurement.

15) 

1.7 cm, 0.05 cm, 2.9%

16) 

2 cm, 0.05 cm, 2.5%

17) 

2.3 cm, 0.05 cm, 2.2%

18) 

2.6 cm, 0.05 cm, 1.9%

19) 

17 cm, 0.05 cm, 0.3%

20) 

17.3 cm, 0.05 cm, 0.3%

Critical thinking questions:

21) Jessica measures a line segment to the nearest millimeter. She calculates that her measurement has up to 0.2% error in it.

What measurement did she find for the line segment?

25 cm

22) What is the minimum error and minimum percent error in Jessica's measurement?

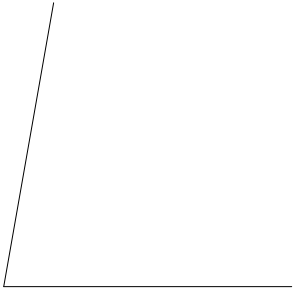
0 cm error; 0% error

Angles and Their Measures

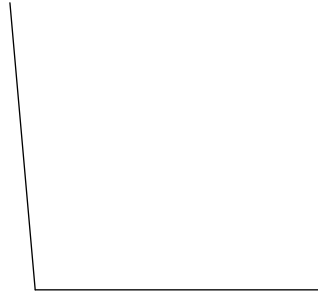
Date _____ Period _____

Find the measure of each angle to the nearest degree.

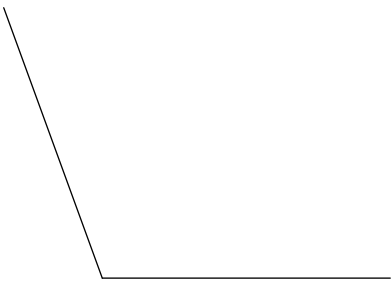
1)



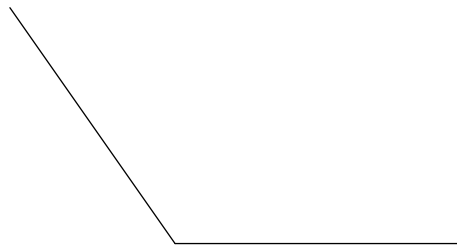
2)



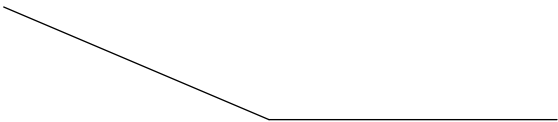
3)



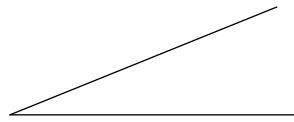
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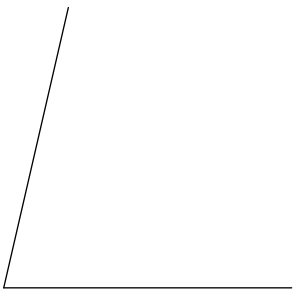
5)



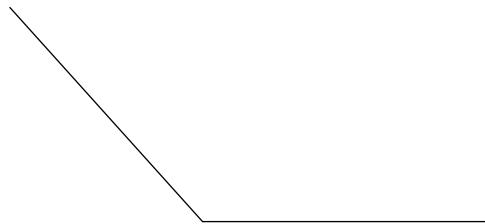
6)



7)



8)



9)



10)



Draw an angle with the given measurement.

11) 90°



12) 70°



13) 120°



14) 105°



15) 31°



16) 166°



17) 144°



18) 53°

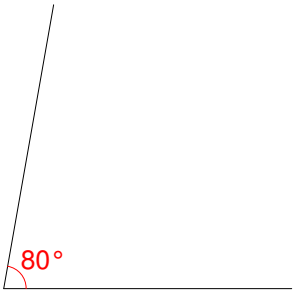


Angles and Their Measures

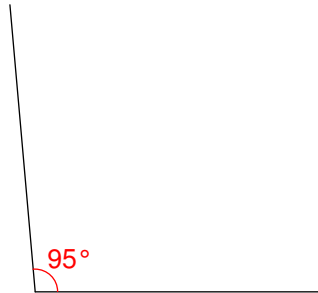
Date _____ Period _____

Find the measure of each angle to the nearest degree.

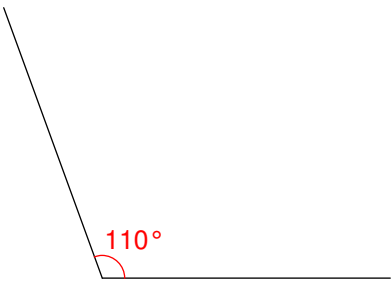
1)



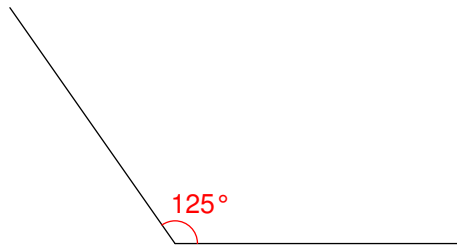
2)



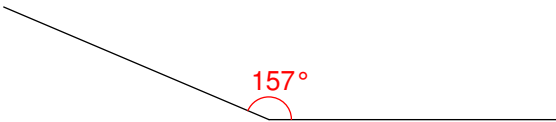
3)



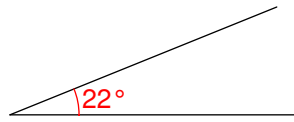
4)



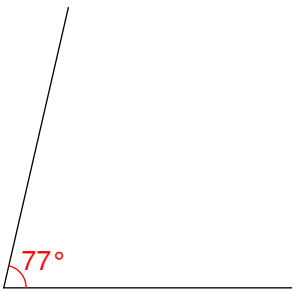
5)



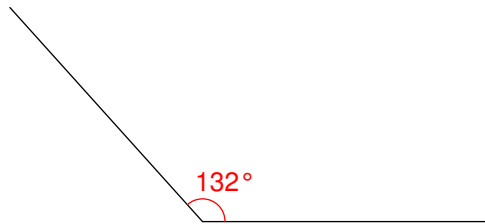
6)



7)



8)



9)

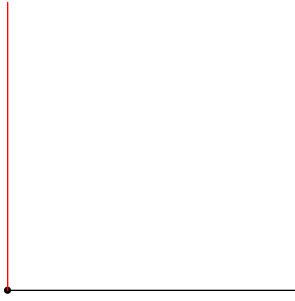


10)

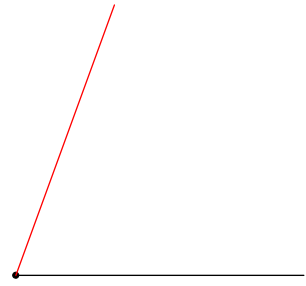


Draw an angle with the given measurement.

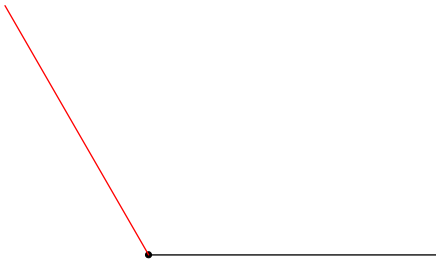
11) 90°



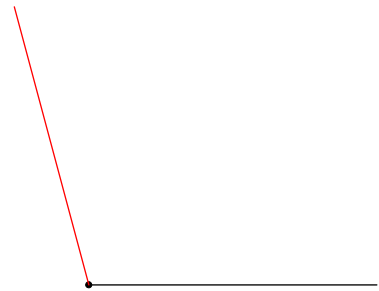
12) 70°



13) 120°



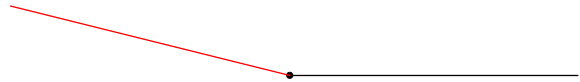
14) 105°



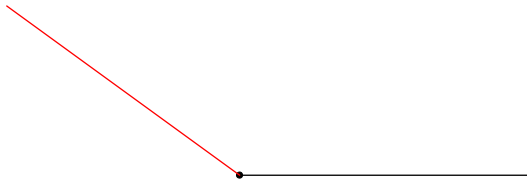
15) 31°



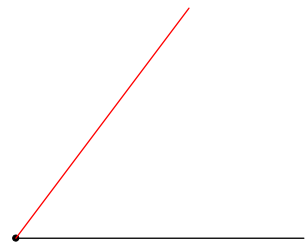
16) 166°



17) 144°



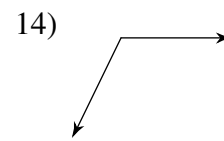
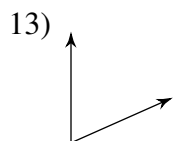
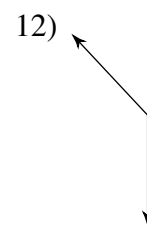
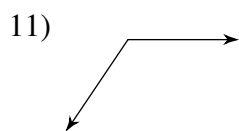
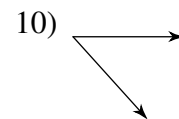
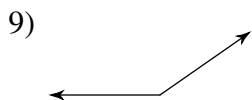
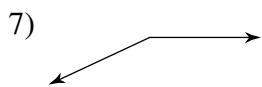
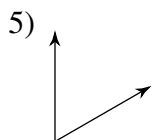
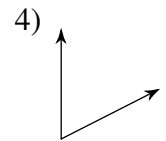
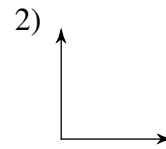
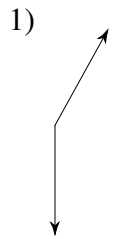
18) 53°



Classifying Angles

Date _____ Period _____

Classify each angle as acute, obtuse, right, or straight.



15) 16°

16) 180°

17) 90°

18) 97°

19) 59°

20) 39°

21) 119°

22) 82°

23) 162°

24) 52°

25) 15°

26) 116°

27) 96°

28) 74°

Classifying Angles

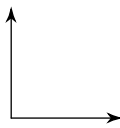
Date _____ Period _____

Classify each angle as acute, obtuse, right, or straight.

1) obtuse



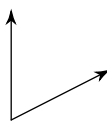
2) right



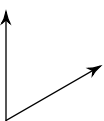
3) obtuse



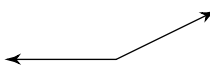
4) acute



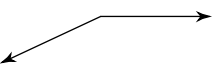
5) acute



6) obtuse



7) obtuse



8) straight



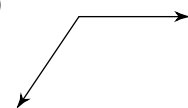
9) obtuse



10) acute



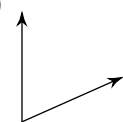
11) obtuse



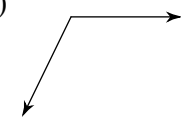
12) obtuse



13) acute



14) obtuse



15) 16° acute

17) 90° right

19) 59° acute

21) 119° obtuse

23) 162° obtuse

25) 15° acute

27) 96° obtuse

16) 180° straight

18) 97° obtuse

20) 39° acute

22) 82° acute

24) 52° acute

26) 116° obtuse

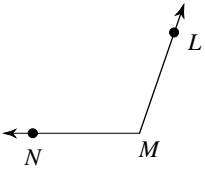
28) 74° acute

Naming Angles

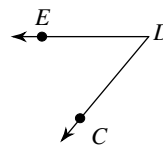
Date _____ Period _____

Name the vertex and sides of each angle.

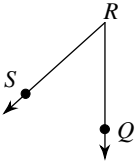
1)



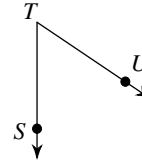
2)



3)

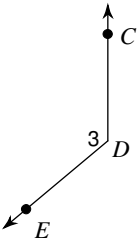


4)

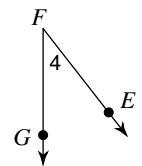


Name each angle in four ways.

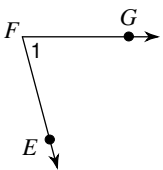
5)



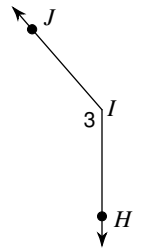
6)



7)



8)



Draw and label an angle to fit each description.

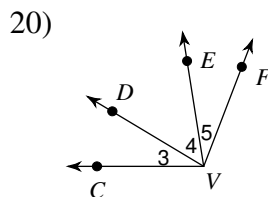
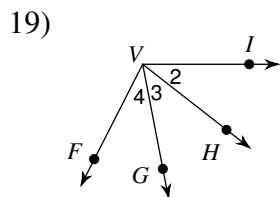
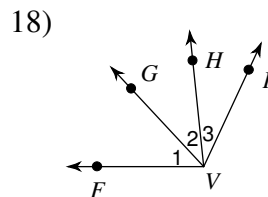
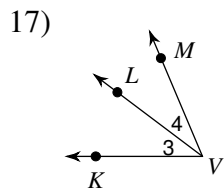
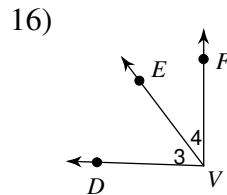
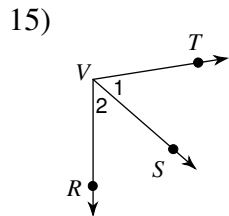
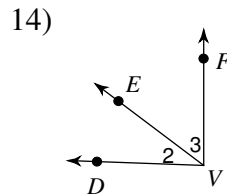
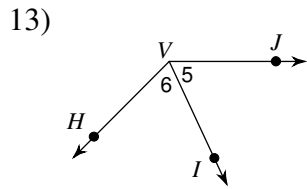
9) an obtuse angle, $\angle Y$

10) an acute angle, $\angle JIH$

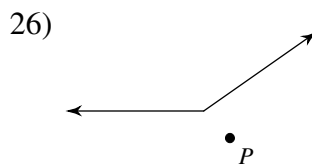
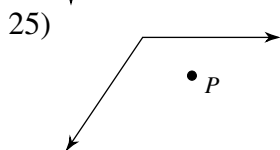
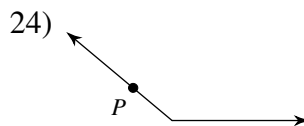
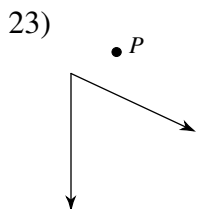
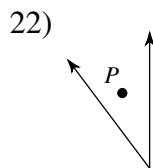
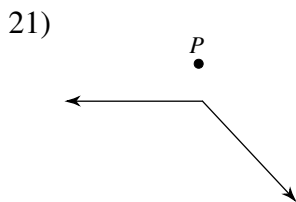
11) a right angle, $\angle 3$

12) a straight angle, $\angle CDE$

Name all the angles that have V as a vertex.



State if the given point is interior, exterior, or on the angle.



Critical thinking questions:

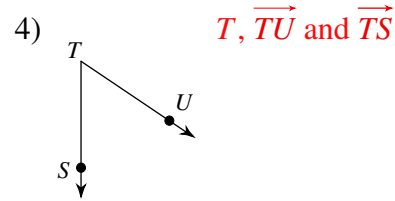
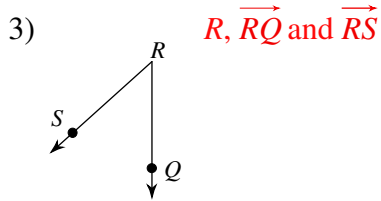
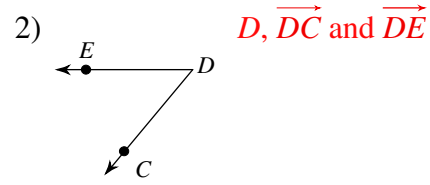
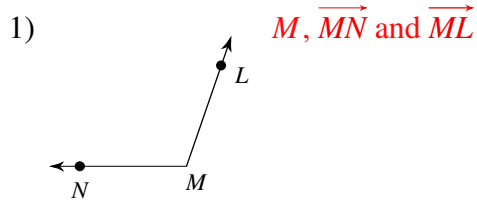
27) Draw a diagram with an acute angle ABC and an obtuse angle DBE so that point D is in the interior of angle ABC .

28) In question #29, why is it impossible for both point D and point E to be in the interior of angle ABC ?

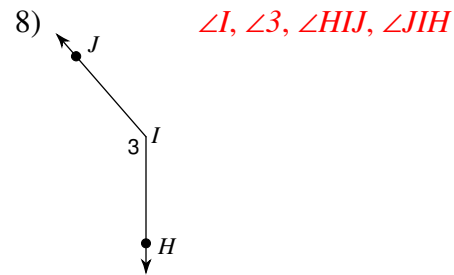
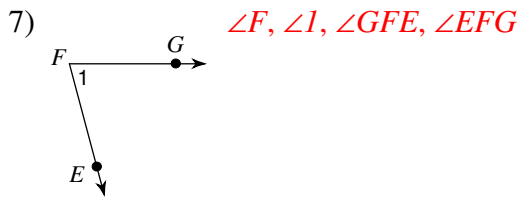
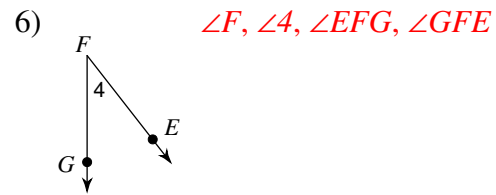
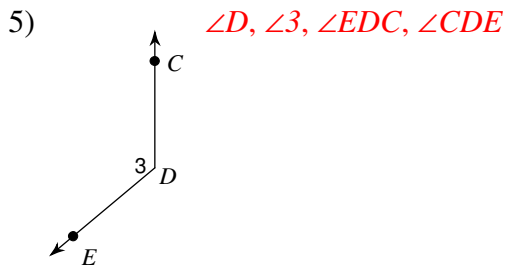
Naming Angles

Date _____ Period _____

Name the vertex and sides of each angle.



Name each angle in four ways.

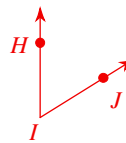


Draw and label an angle to fit each description.

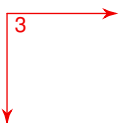
9) an obtuse angle, $\angle Y$



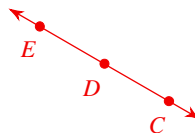
10) an acute angle, $\angle JIH$



11) a right angle, $\angle 3$

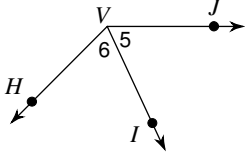


12) a straight angle, $\angle CDE$

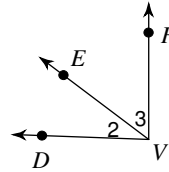


Name all the angles that have V as a vertex.

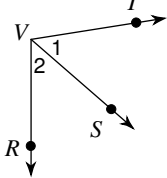
13) $\angle 5, \angle 6, \angle JVH$



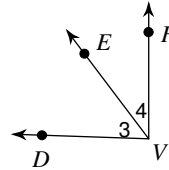
14) $\angle 2, \angle 3, \angle DVF$



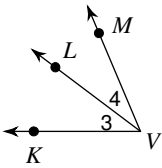
15) $\angle 1, \angle 2, \angle TVR$



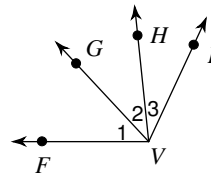
16) $\angle 3, \angle 4, \angle DVF$



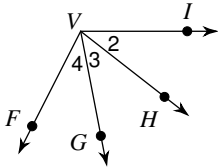
17) $\angle 3, \angle 4, \angle KVM$



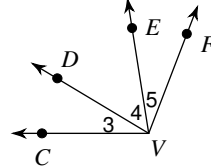
18) $\angle 1, \angle 2, \angle 3, \angle FVH, \angle FVI, \angle GVI$



19) $\angle 2, \angle 3, \angle 4, \angle IVG, \angle IVF, \angle HVF$

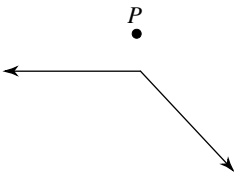


20) $\angle 3, \angle 4, \angle 5, \angle CVE, \angle CVF, \angle DVF$

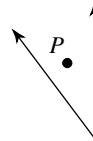


State if the given point is interior, exterior, or on the angle.

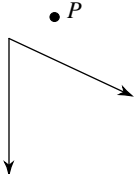
21) Exterior



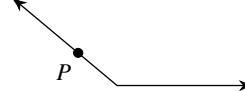
22) Interior



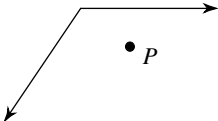
23) Exterior



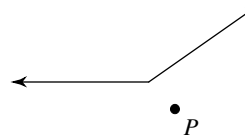
24) On the angle



25) Interior



26) Exterior



Critical thinking questions:

27) Draw a diagram with an acute angle ABC and an obtuse angle DBE so that point D is in the interior of angle ABC .

Answers vary

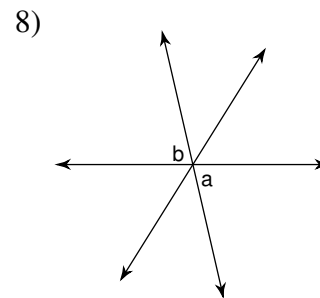
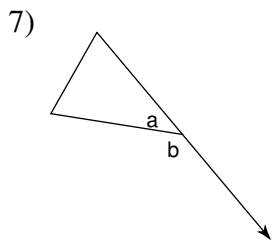
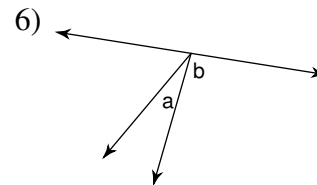
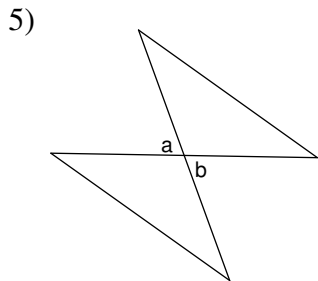
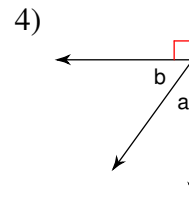
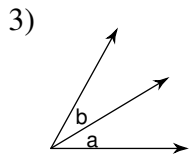
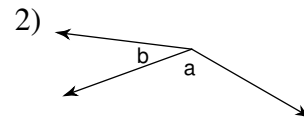
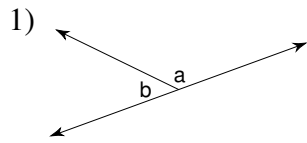
28) In question #29, why is it impossible for both point D and point E to be in the interior of angle ABC ?

Because angle ABC is smaller than angle DBE

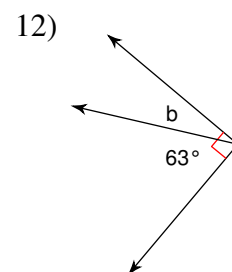
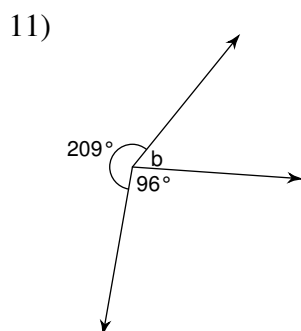
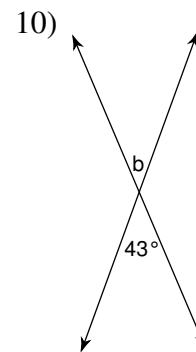
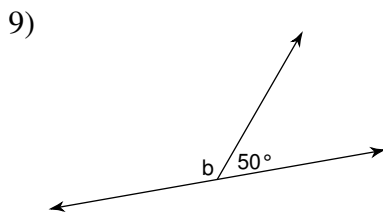
Angle Pair Relationships

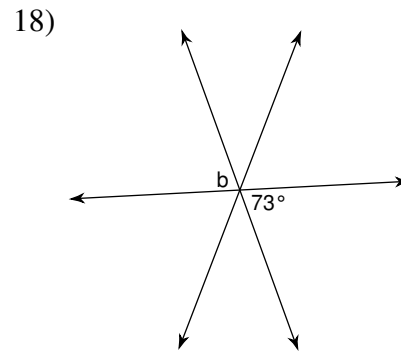
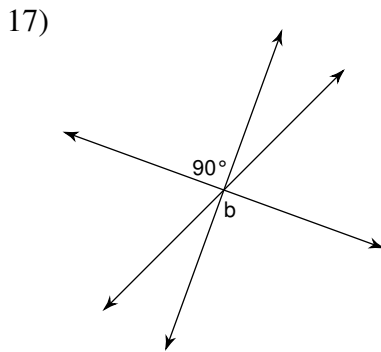
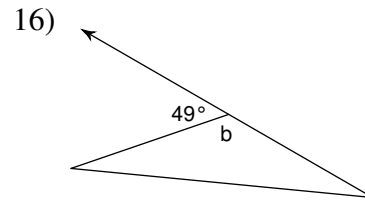
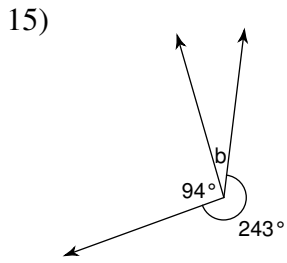
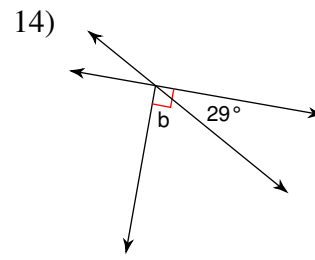
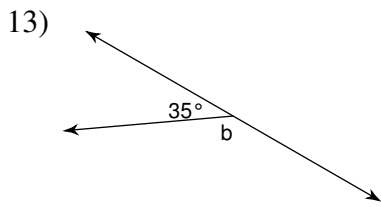
Date _____ Period _____

Name the relationship: complementary, linear pair, vertical, or adjacent.

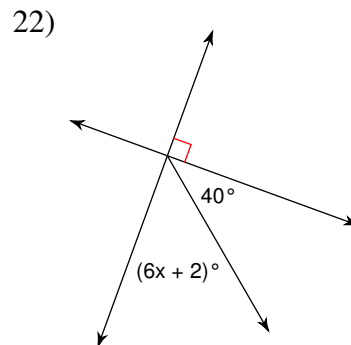
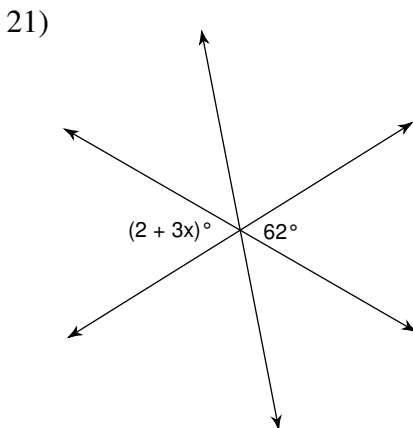
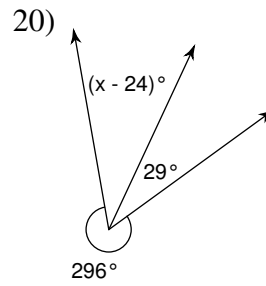
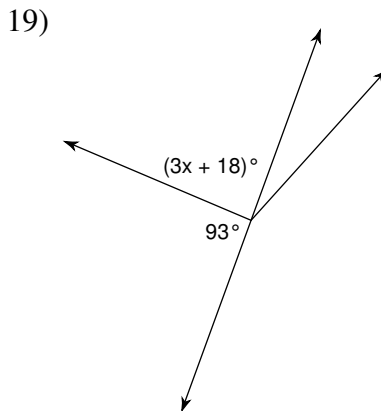


Find the measure of angle b.





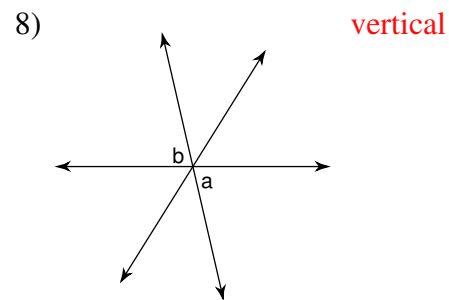
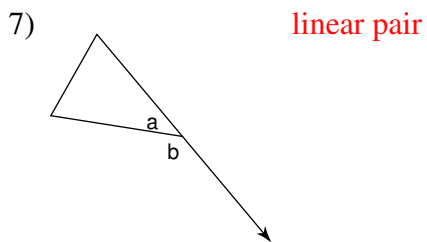
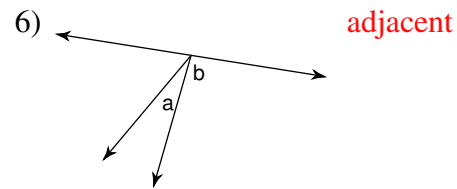
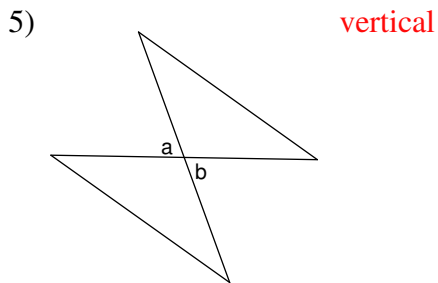
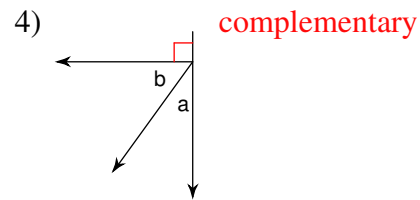
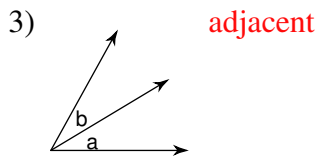
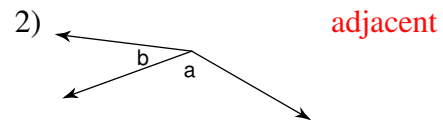
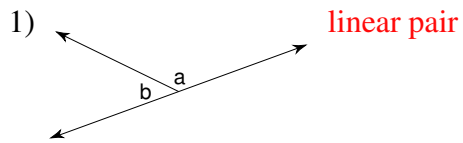
Find the value of x.



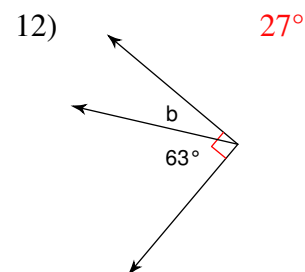
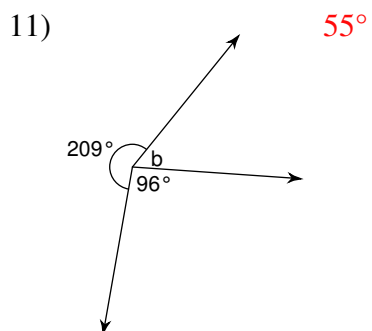
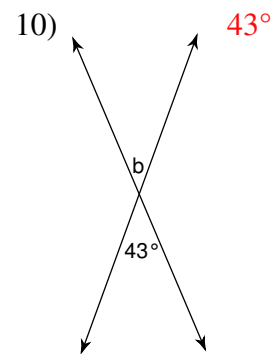
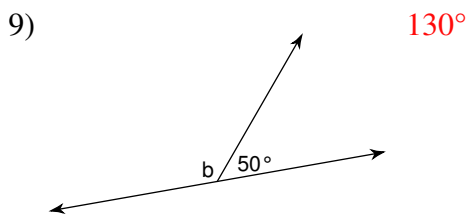
Angle Pair Relationships

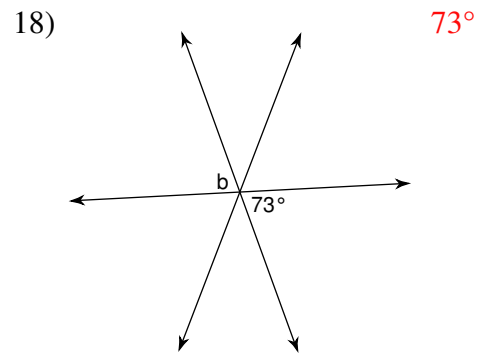
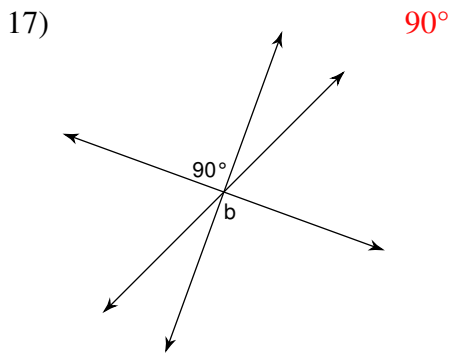
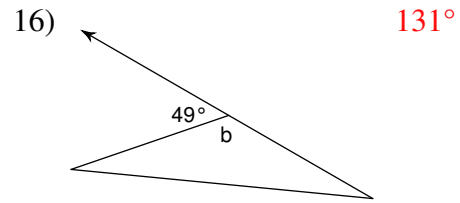
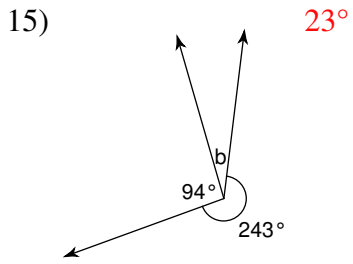
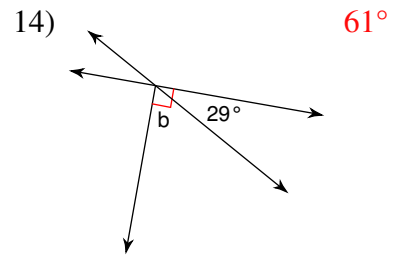
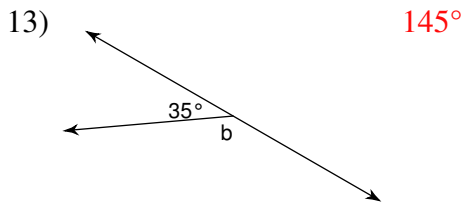
Date _____ Period _____

Name the relationship: complementary, linear pair, vertical, or adjacent.

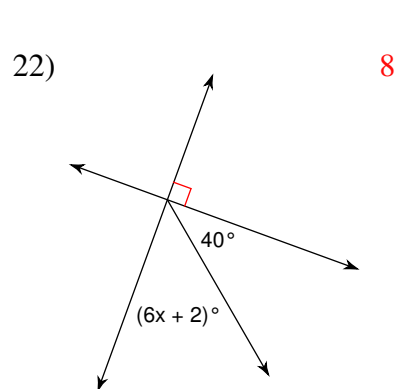
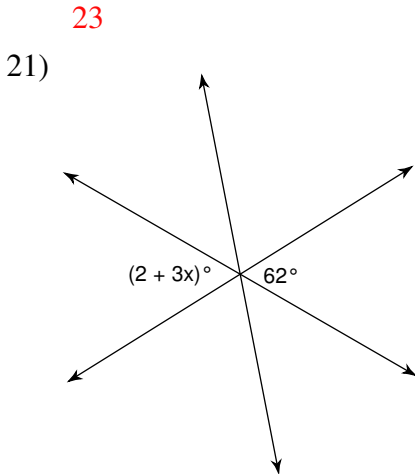
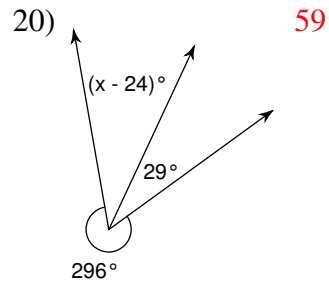
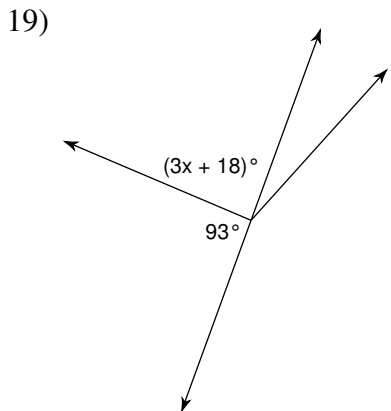


Find the measure of angle b.





Find the value of x.

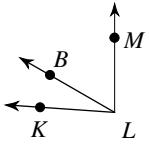


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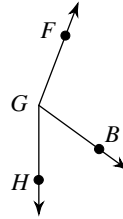
The Angle Addition Postulate

Date _____ Period _____

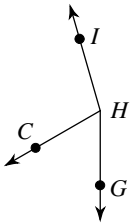
- 1) Find $m\angle KLM$ if $m\angle KLB = 26^\circ$
and $m\angle BLM = 60^\circ$.



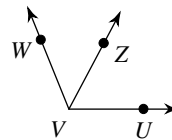
- 2) Find $m\angle FGH$ if $m\angle FGB = 105^\circ$
and $m\angle BGH = 54^\circ$.



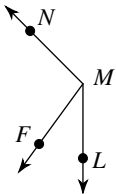
- 3) $m\angle GHC = 60^\circ$ and $m\angle CHI = 104^\circ$.
Find $m\angle GHI$.



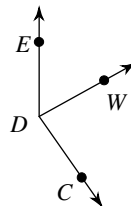
- 4) Find $m\angle WVU$ if $m\angle ZVU = 62^\circ$
and $m\angle WVZ = 50^\circ$.



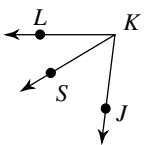
- 5) $m\angle FMN = 99^\circ$ and $m\angle LMF = 36^\circ$.
Find $m\angle LMN$.



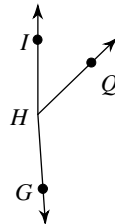
- 6) Find $m\angle WDC$ if $m\angle EDC = 145^\circ$
and $m\angle EDW = 61^\circ$.



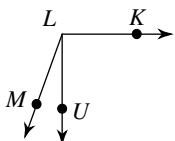
- 7) Find $m\angle JKL$ if $m\angle SKL = 31^\circ$
and $m\angle JKS = 52^\circ$.



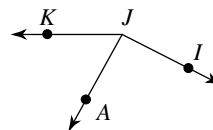
- 8) Find $m\angle IHQ$ if $m\angle IHG = 176^\circ$
and $m\angle QHG = 130^\circ$.



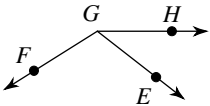
- 9) Find $m\angle KLU$ if $m\angle ULM = 20^\circ$
and $m\angle KLM = 110^\circ$.



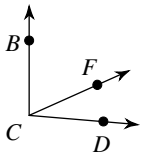
- 10) Find $m\angle IJA$ if $m\angle AJK = 61^\circ$
and $m\angle IJK = 153^\circ$.



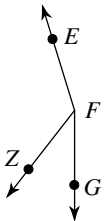
- 11) $m\angle HGF = 16x + 4$, $m\angle EGF = 110^\circ$,
and $m\angle HGE = 3x + 11$. Find x .



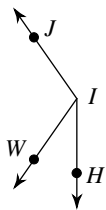
- 13) $m\angle FCD = x + 41$, $m\angle BCF = x + 78$,
and $m\angle BCD = 95^\circ$. Find x .



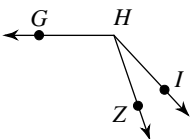
- 15) $m\angle GFZ = 38^\circ$, $m\angle ZFE = 2x + 125$,
and $m\angle GFE = x + 163$. Find x .



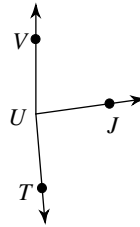
- 17) Find $m\angle HIW$ if $m\angle WIJ = 10x$,
 $m\angle HIJ = 145^\circ$, and $m\angle HIW = 2x + 13$.



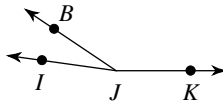
- 19) $m\angle ZHG = 11x - 1$, $m\angle IHZ = 24^\circ$,
and $m\angle IHG = 12x + 13$. Find $m\angle IHG$.



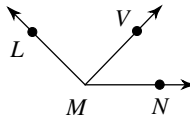
- 12) $m\angle VUT = 175^\circ$, $m\angle VUJ = 17x - 3$,
and $m\angle JUT = 17x + 8$. Find x .



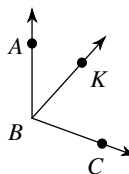
- 14) Find x if $m\angle BJK = 146 + 2x$,
 $m\angle IJK = 172^\circ$, and $m\angle IJB = 2x + 26$.



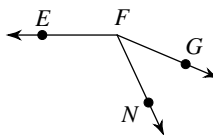
- 16) Find x if $m\angle LMN = 135^\circ$,
 $m\angle LMV = -1 + 45x$, and $m\angle VMN = 23x$.



- 18) $m\angle ABC = 17x + 8$, $m\angle ABK = 42^\circ$,
and $m\angle KBC = 12x - 4$. Find $m\angle ABC$.



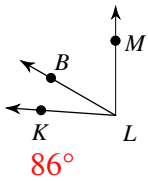
- 20) $m\angle GFN = 4x + 10$, $m\angle NFE = 14x + 3$,
and $m\angle GFE = 157^\circ$. Find $m\angle NFE$.



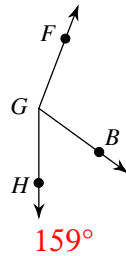
The Angle Addition Postulate

Date _____ Period _____

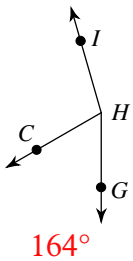
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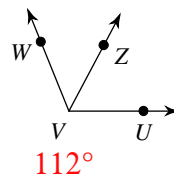
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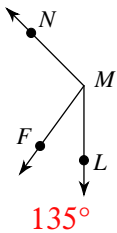
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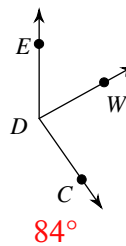
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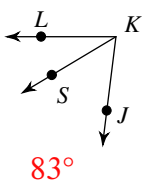
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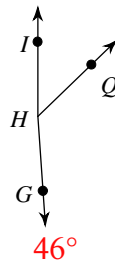
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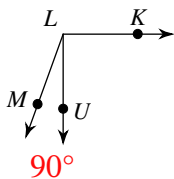
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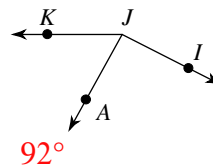
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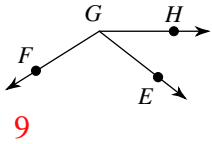
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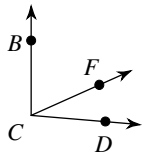


- 11) $m\angle HGF = 16x + 4$, $m\angle EGF = 110^\circ$,
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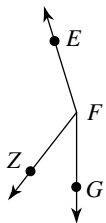
9

- 13) $m\angle FCD = x + 41$, $m\angle BCF = x + 78$,
and $m\angle BCD = 95^\circ$. Find x .



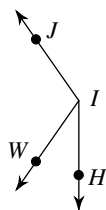
-12

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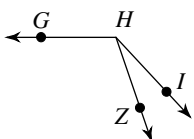
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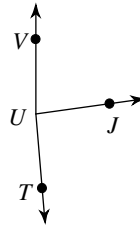
35°

- 19) $m\angle ZHG = 11x - 1$, $m\angle IHZ = 24^\circ$,
and $m\angle IHG = 12x + 13$. Find $m\angle IHG$.



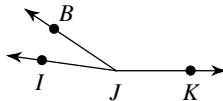
133°

- 12) $m\angle VUT = 175^\circ$, $m\angle VUJ = 17x - 3$,
and $m\angle JUT = 17x + 8$. Find x .



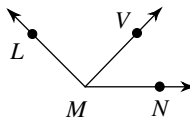
5

- 14) Find x if $m\angle BJK = 146 + 2x$,
 $m\angle IJK = 172^\circ$, and $m\angle IJB = 2x + 26$.



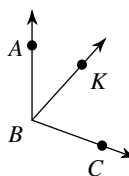
0

- 16) Find x if $m\angle LMN = 135^\circ$,
 $m\angle LMV = -1 + 45x$, and $m\angle VMN = 23x$.



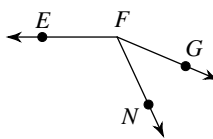
2

- 18) $m\angle ABC = 17x + 8$, $m\angle ABK = 42^\circ$,
and $m\angle KBC = 12x - 4$. Find $m\angle ABC$.



110°

- 20) $m\angle GFN = 4x + 10$, $m\angle NFE = 14x + 3$,
and $m\angle GFE = 157^\circ$. Find $m\angle NFE$.



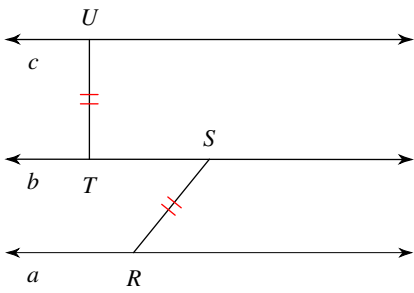
115°

Information in Geometric Diagrams

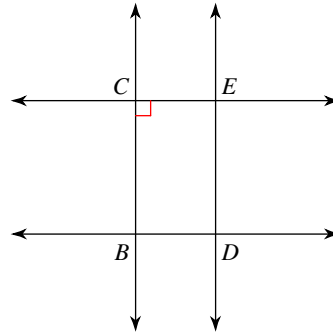
Date _____ Period _____

List all information given by the marks on the diagram.

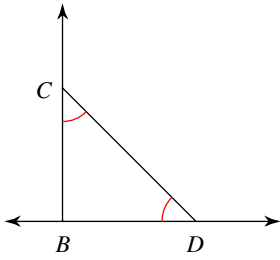
1)



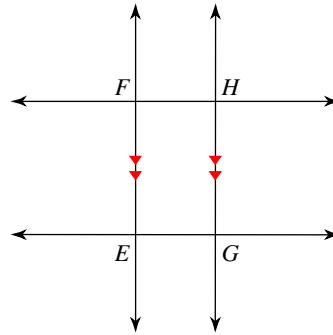
2)



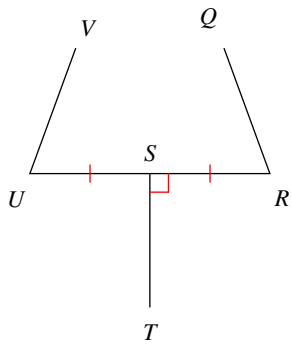
3)



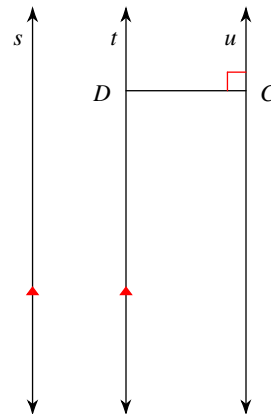
4)



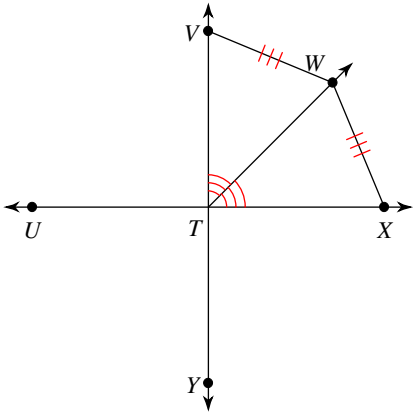
5)



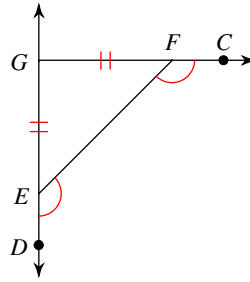
6)



7)

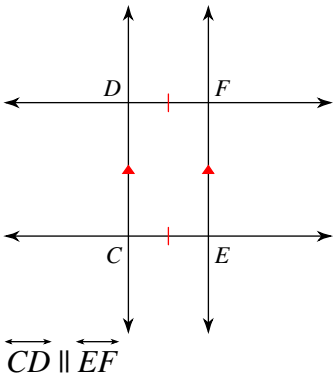


8)

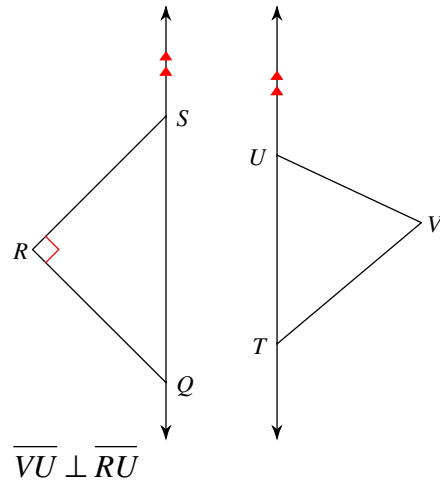


Write if the statement given is indicated by the marks on the diagram.

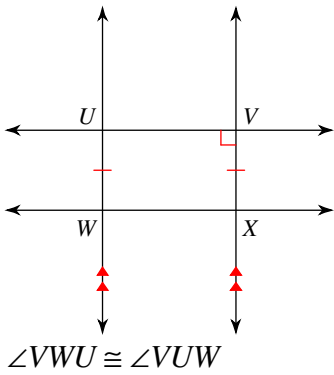
9)



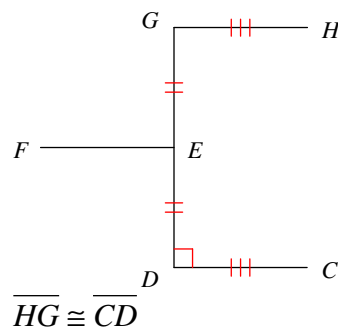
10)



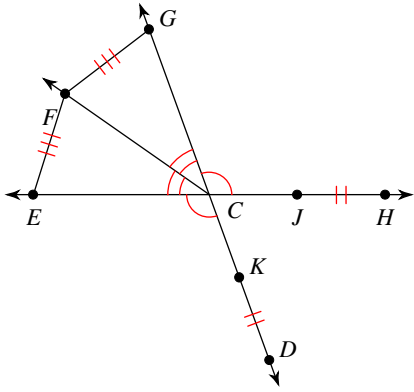
11)



12)

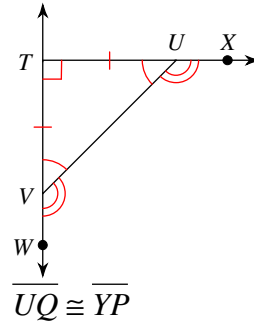


13)



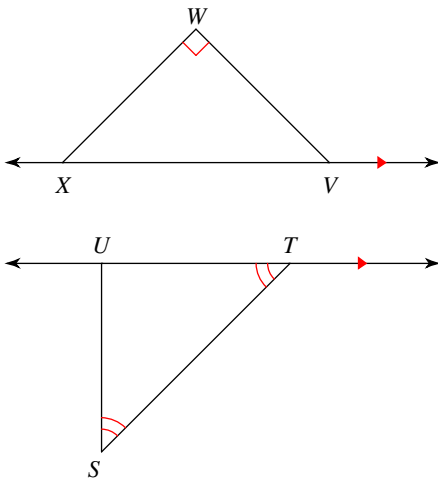
$$\angle DCE \cong \angle HCG$$

14)

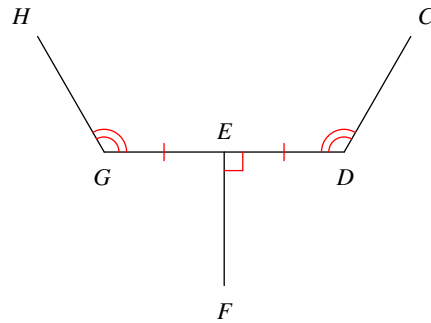


List all information given by the marks on the diagram.

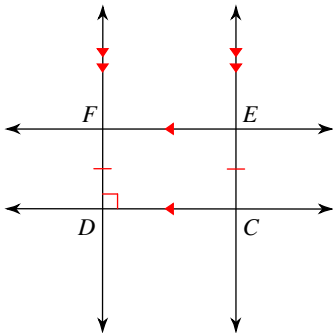
15)



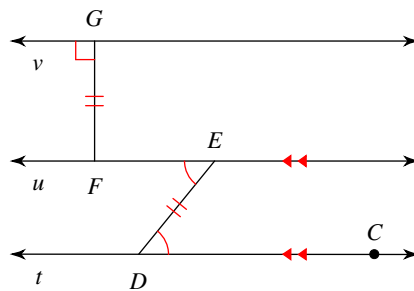
16)



17)



18)



Critical thinking questions:

19) Draw and mark a diagram that contains two congruent line segments and three congruent angles.

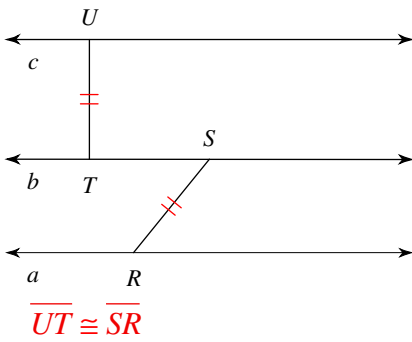
20) Draw and mark a diagram that has two perpendicular lines and four congruent line segments.

Information in Geometric Diagrams

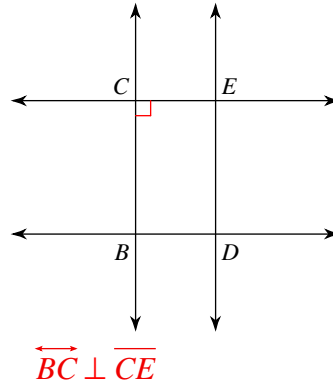
Date _____ Period _____

List all information given by the marks on the diagram.

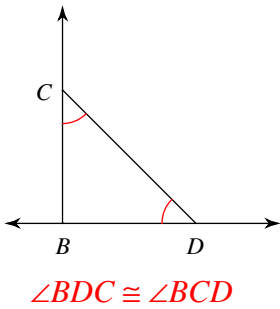
1)



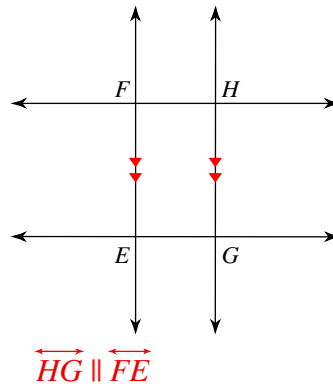
2)



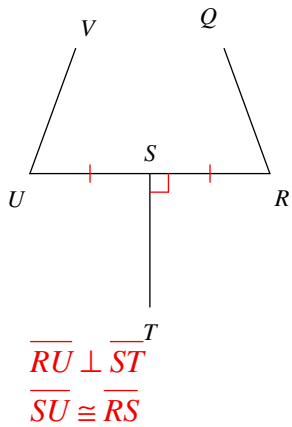
3)



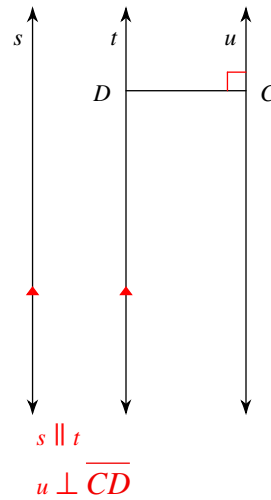
4)



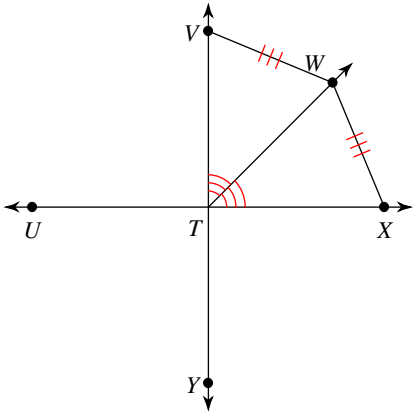
5)



6)

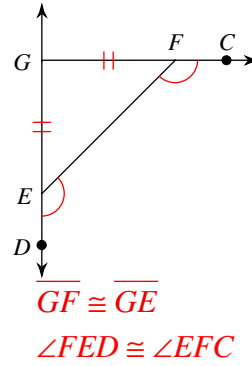


7)



$$\begin{aligned} \angle VTW &\cong \angle WTX \\ \overline{WX} &\cong \overline{VW} \end{aligned}$$

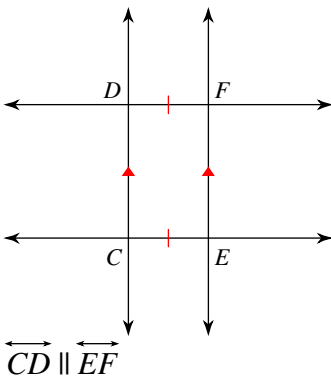
8)



$$\begin{aligned} \overline{GF} &\cong \overline{GE} \\ \angle FED &\cong \angle EFC \end{aligned}$$

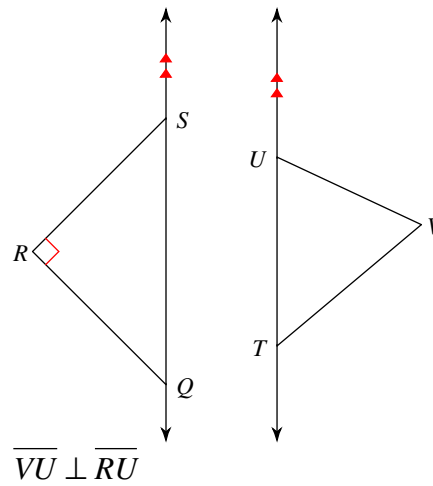
Write if the statement given is indicated by the marks on the diagram.

9)



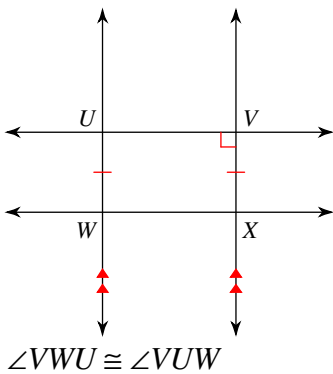
Given by the diagram

10)



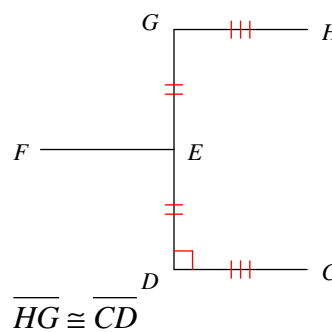
Not given by the diagram

11)



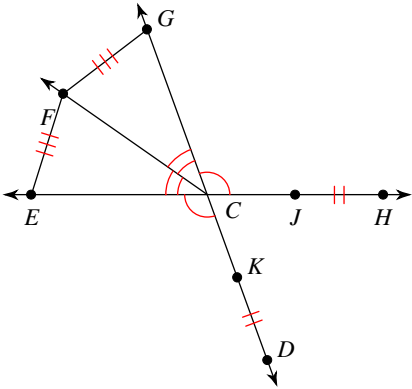
Not given by the diagram

12)



Given by the diagram

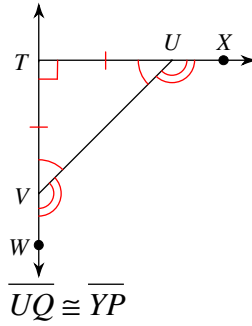
13)



$$\angle DCE \cong \angle HCG$$

Given by the diagram

14)

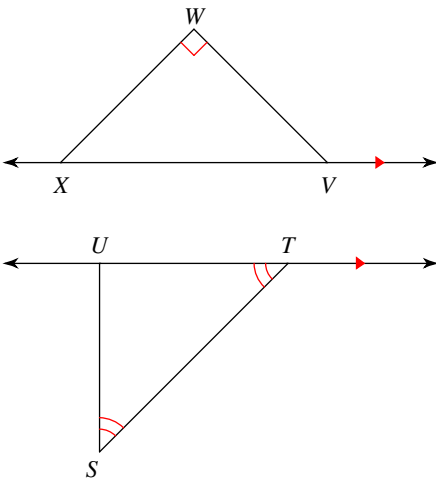


$$\overline{UQ} \cong \overline{YP}$$

Not given by the diagram

List all information given by the marks on the diagram.

15)

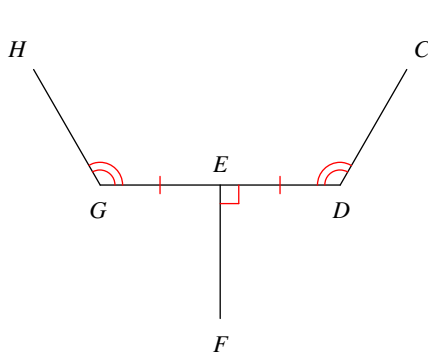


$$\overline{XW} \perp \overline{WV}$$

$$\overline{UT} \parallel \overline{XV}$$

$$\angle UTS \cong \angle UST$$

16)

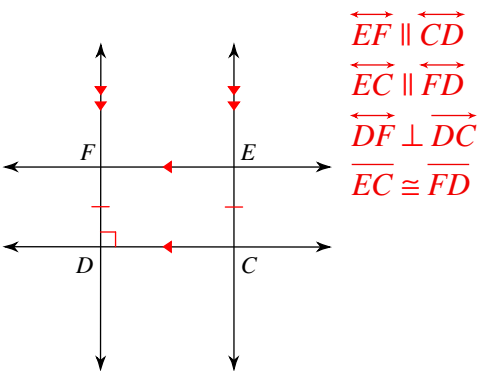


$$\overline{DG} \perp \overline{EF}$$

$$\angle CDE \cong \angle HGE$$

$$\overline{DE} \cong \overline{EG}$$

17)



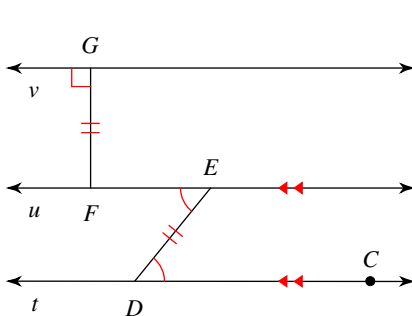
$$\overline{EF} \parallel \overline{CD}$$

$$\overline{EC} \parallel \overline{FD}$$

$$\overline{DF} \perp \overline{DC}$$

$$\overline{EC} \cong \overline{FD}$$

18)



$$t \parallel u$$

$$v \perp \overline{GF}$$

$$\overline{GF} \cong \overline{ED}$$

$$\angle FED \cong \angle CDE$$

Critical thinking questions:

19) Draw and mark a diagram that contains two congruent line segments and three congruent angles.

Many answers

20) Draw and mark a diagram that has two perpendicular lines and four congruent line segments.

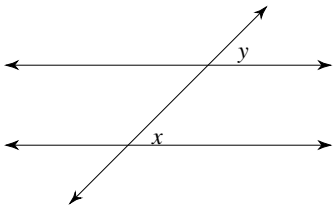
Many answers. Ex: A square.

Parallel Lines and Transversals

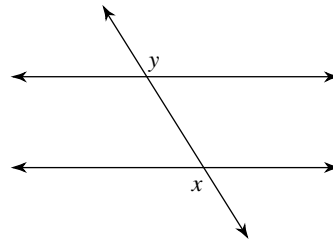
Date _____ Period _____

Identify each pair of angles as corresponding, alternate interior, alternate exterior, or consecutive interior.

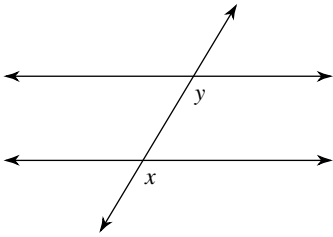
1)



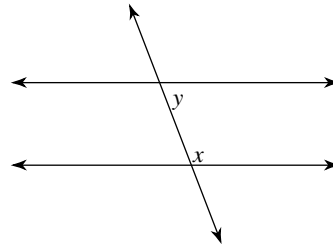
2)



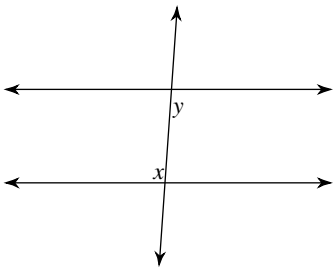
3)



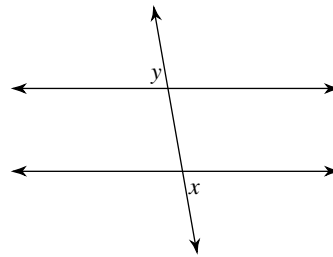
4)



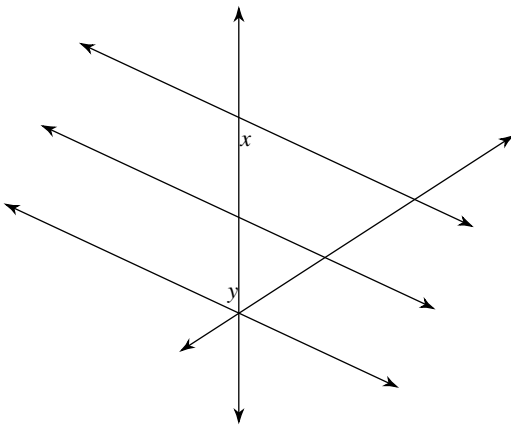
5)



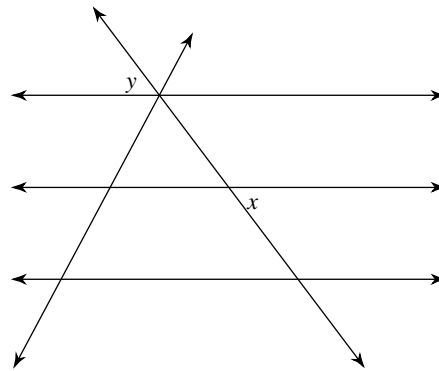
6)



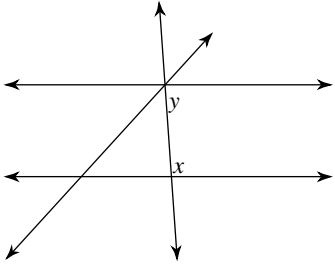
7)



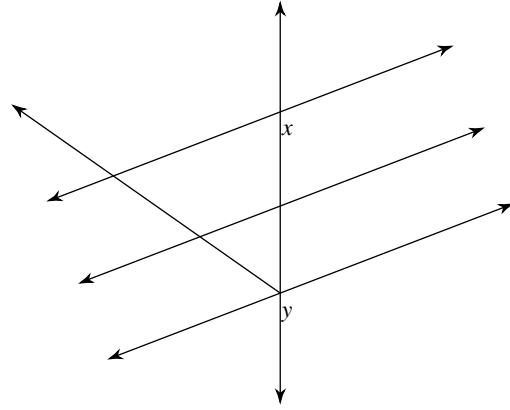
8)



9)

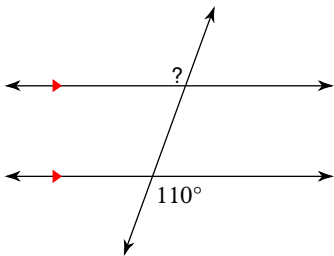


10)

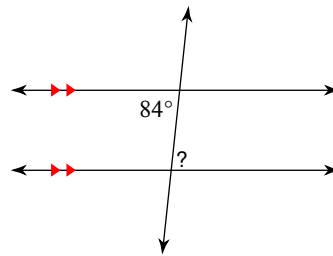


Find the measure of each angle indicated.

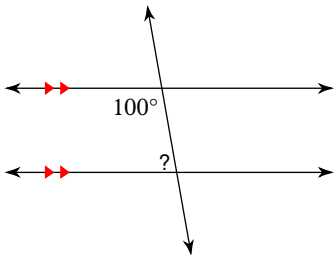
11)



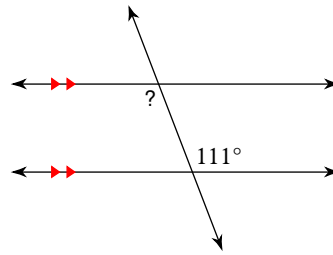
12)



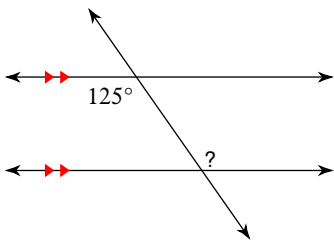
13)



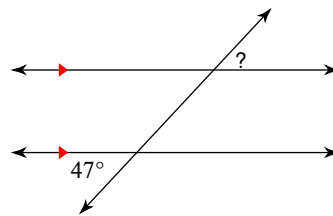
14)



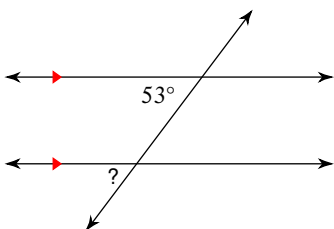
15)



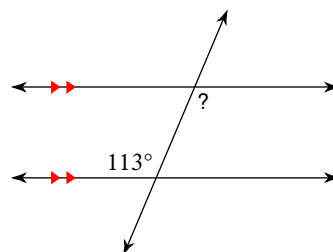
16)



17)

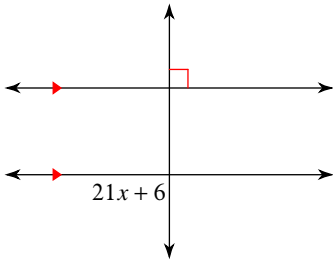


18)

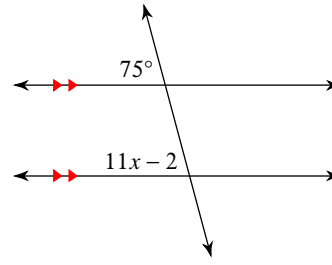


Solve for x .

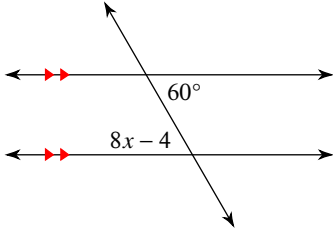
19)



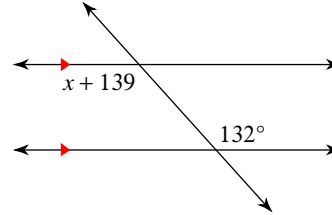
20)



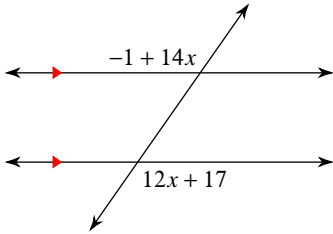
21)



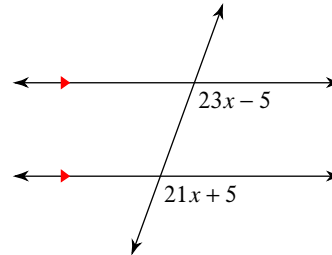
22)



23)

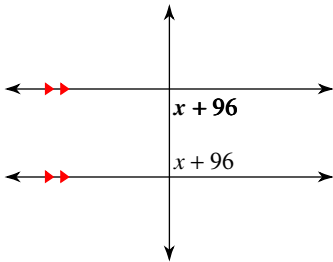


24)

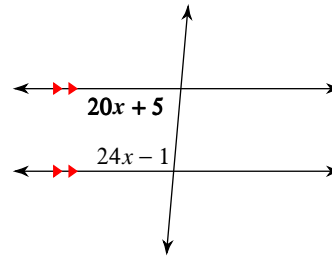


Find the measure of the angle indicated in bold.

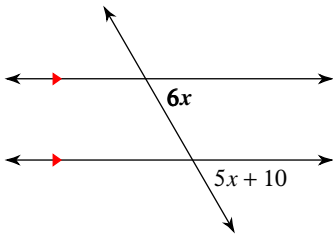
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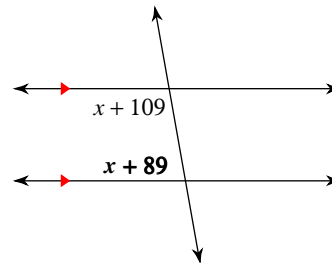
26)



27)



28)

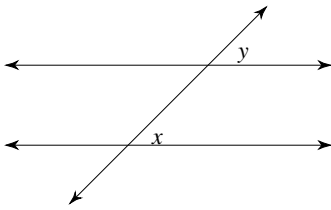


Parallel Lines and Transversals

Date _____ Period _____

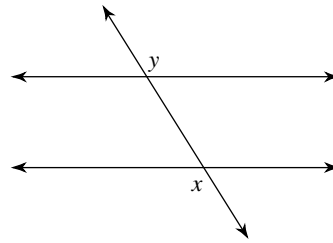
Identify each pair of angles as corresponding, alternate interior, alternate exterior, or consecutive interior.

1)



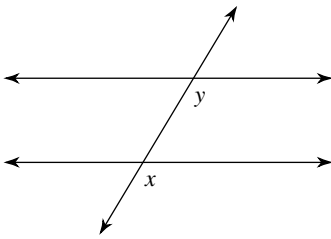
corresponding

2)



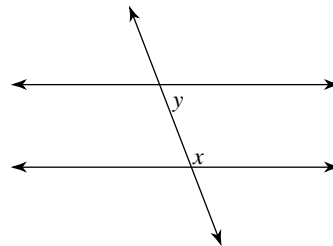
alternate exterior

3)



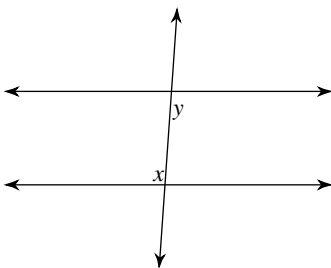
corresponding

4)



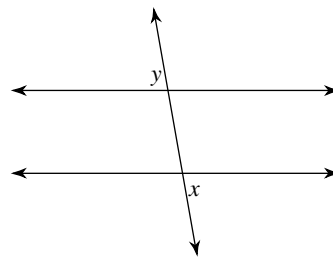
consecutive interior

5)



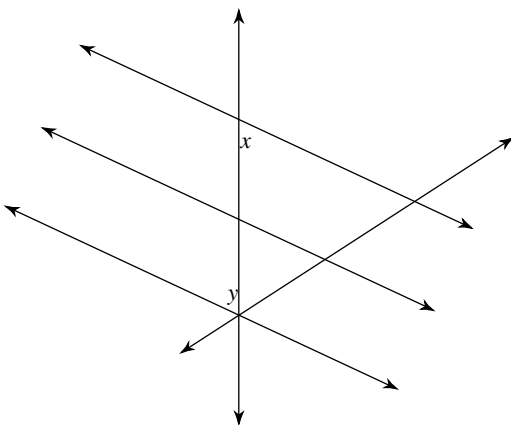
alternate interior

6)



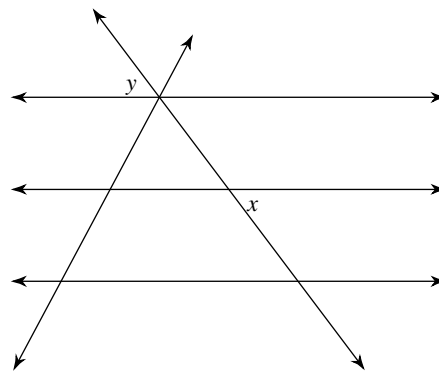
alternate exterior

7)



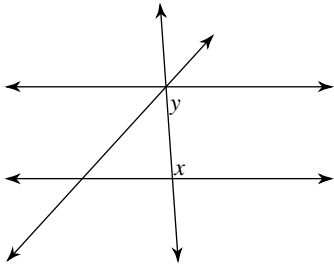
alternate interior

8)



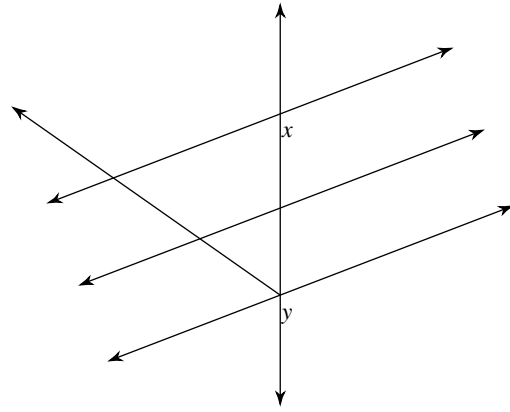
alternate exterior

9)



consecutive interior

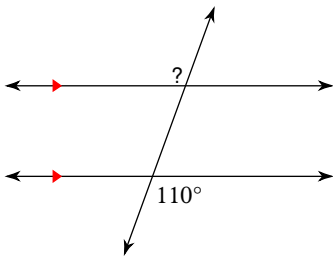
10)



corresponding

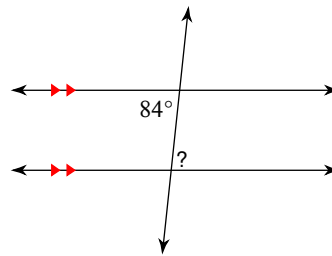
Find the measure of each angle indicated.

11)



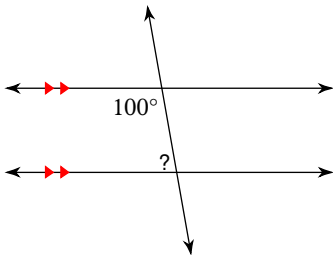
110°

12)



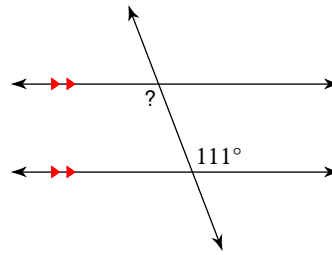
84°

13)



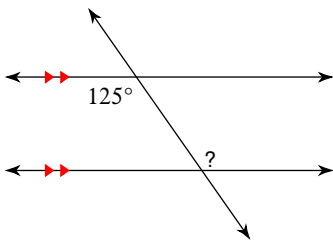
80°

14)



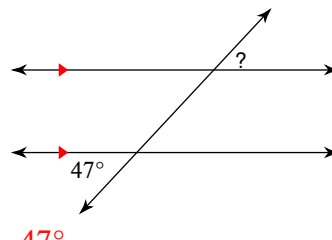
111°

15)



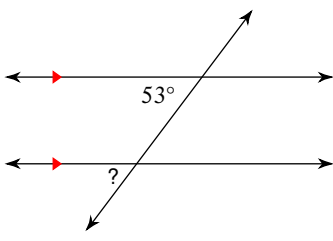
125°

16)



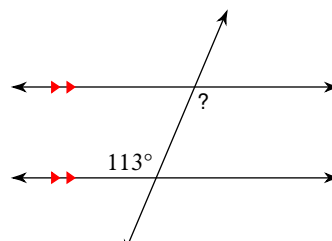
47°

17)



53°

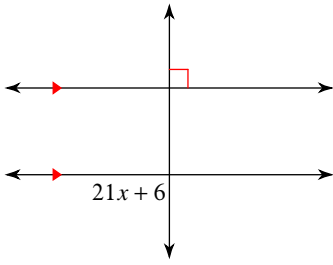
18)



113°

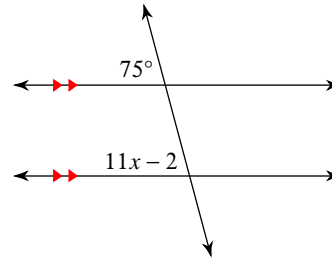
Solve for x .

19)



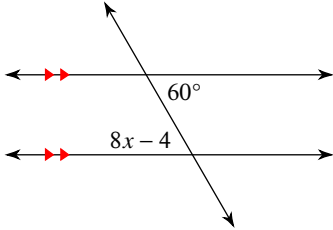
4

20)



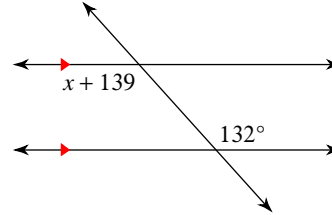
7

21)



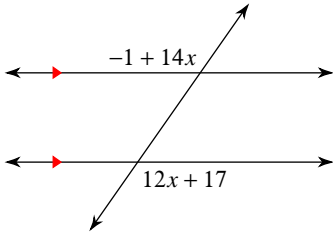
8

22)



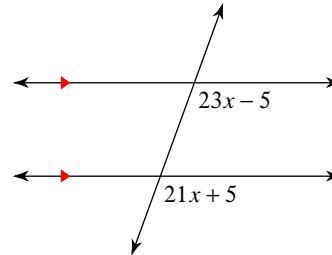
-7

23)



9

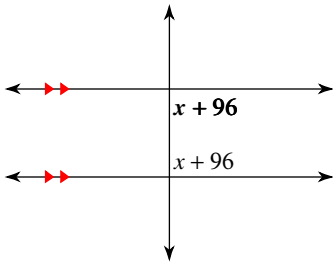
24)



5

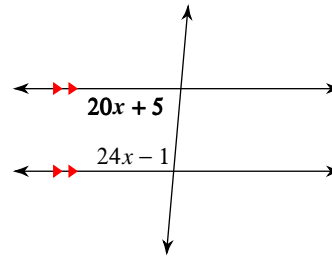
Find the measure of the angle indicated in bold.

25)



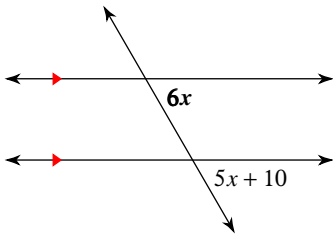
90°

26)



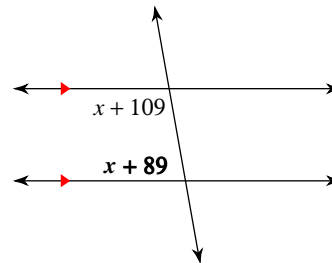
85°

27)



60°

28)



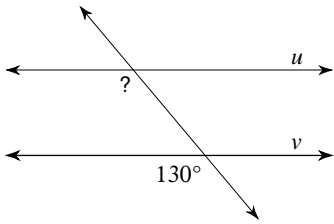
80°

Proving Lines Parallel

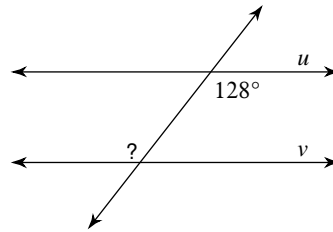
Date _____ Period _____

Find the measure of the indicated angle that makes lines u and v parallel.

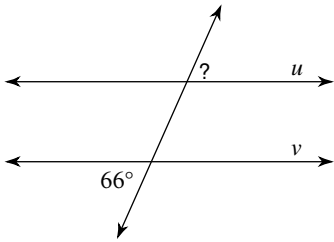
1)



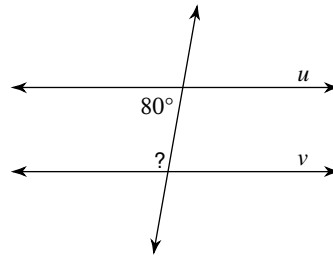
2)



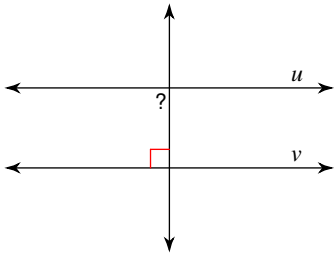
3)



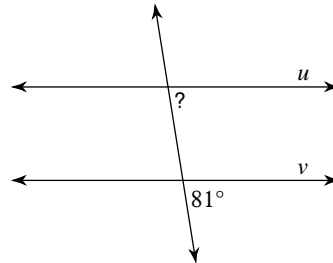
4)



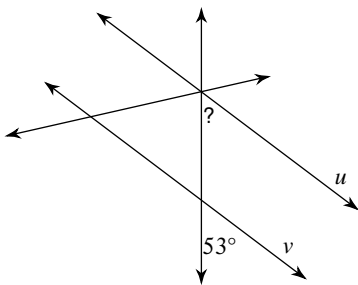
5)



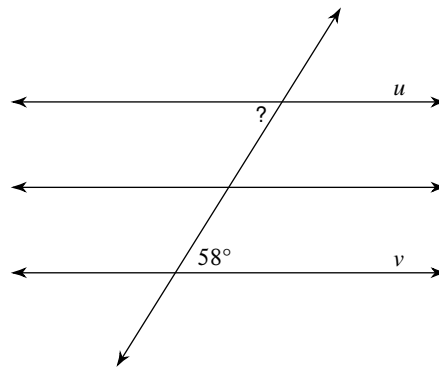
6)



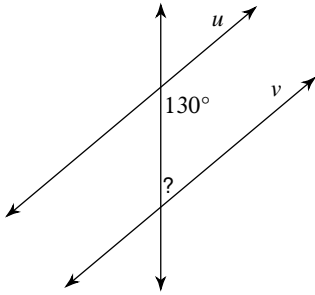
7)



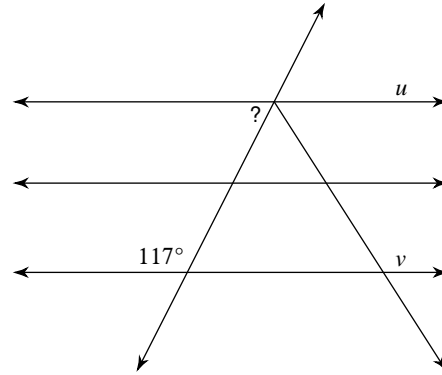
8)



9)

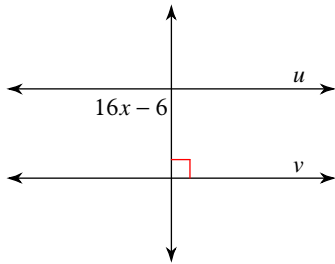


10)

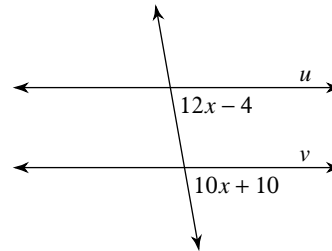


Find the value of x that makes lines u and v parallel.

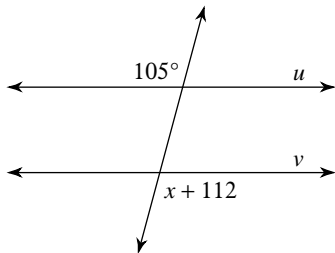
11)



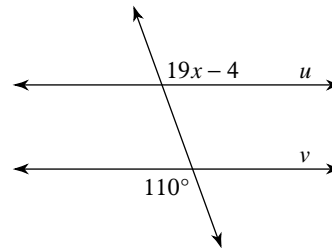
12)



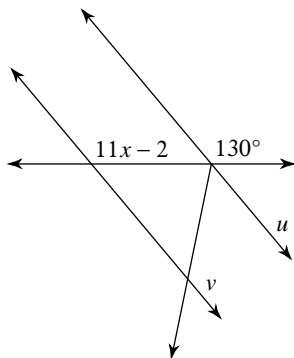
13)



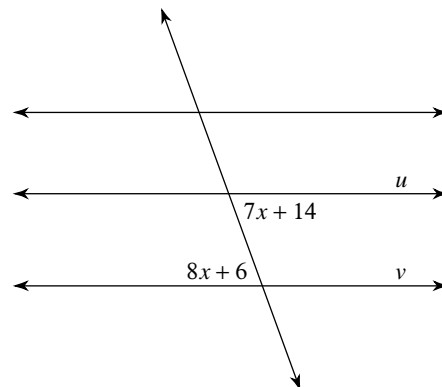
14)



15)



16)



Critical thinking questions:

17) For question #16, find a value of x that makes lines u and v intersect.

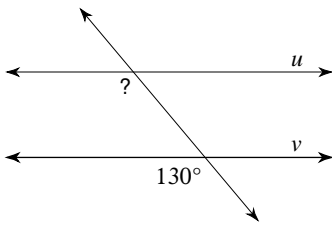
18) Even if the lines in question #16 were not parallel, could $x = 25$? Why or why not?

Proving Lines Parallel

Date _____ Period _____

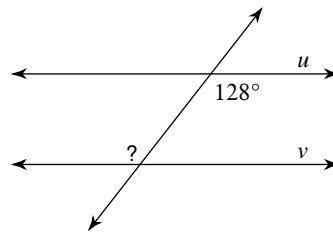
Find the measure of the indicated angle that makes lines u and v parallel.

1)



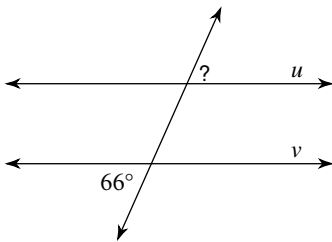
130°

2)



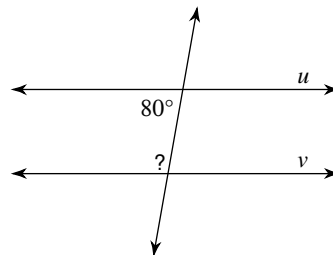
128°

3)



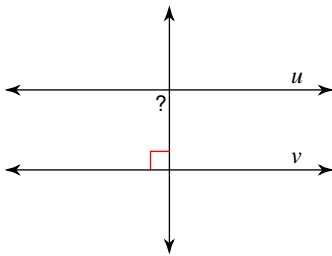
66°

4)



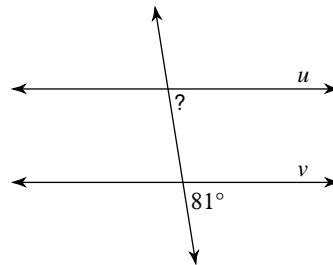
100°

5)



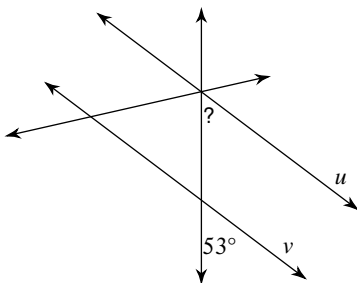
90°

6)



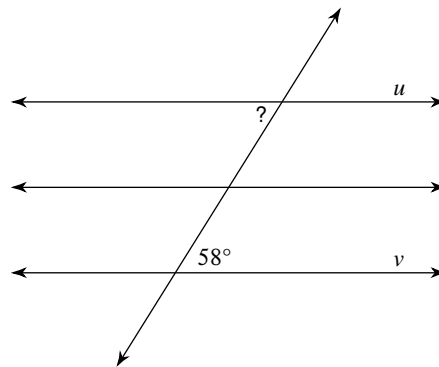
81°

7)



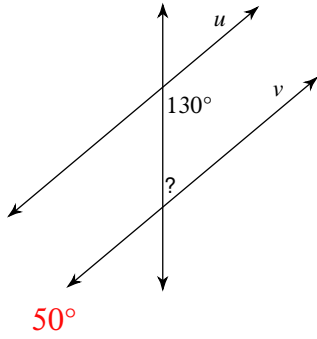
53°

8)



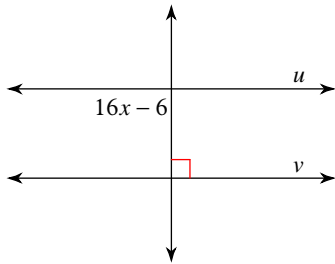
58°

9)



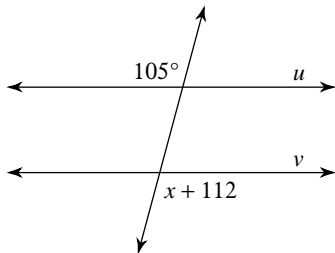
Find the value of x that makes lines u and v parallel.

11)



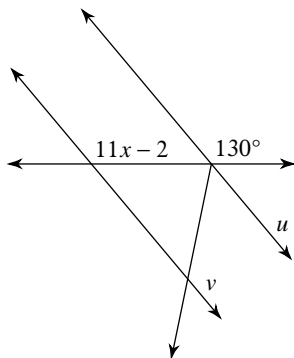
6

13)



-7

15)



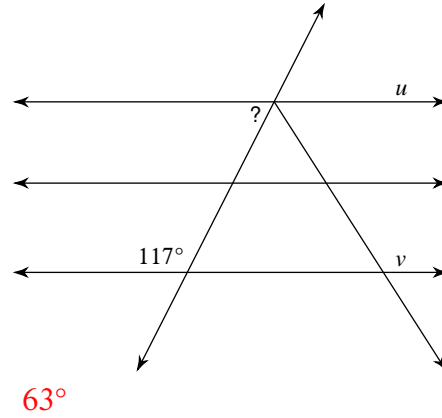
12

Critical thinking questions:

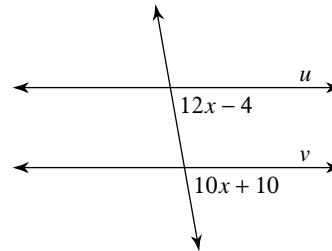
17) For question #16, find a value of x that makes lines u and v intersect.

Any value other than 8. Ideally $0 \leq x \leq 10$

10)

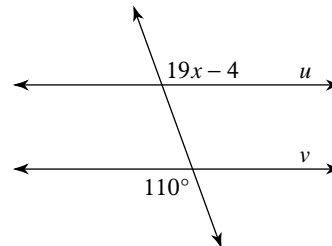


12)



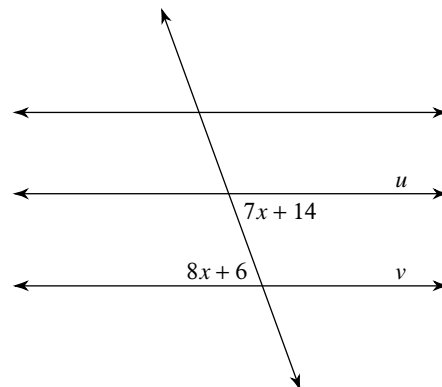
7

14)



6

16)



8

18) Even if the lines in question #16 were not parallel, could $x = 25$? Why or why not?

No, that would make the angles 189° and 206° .

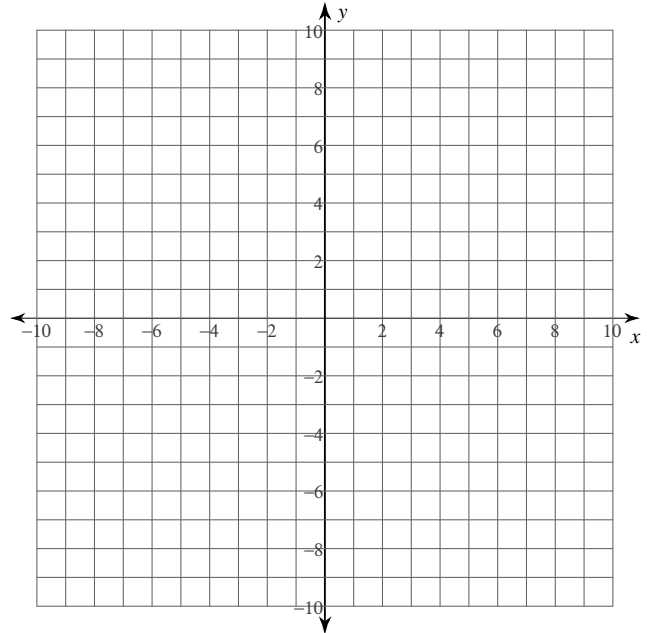
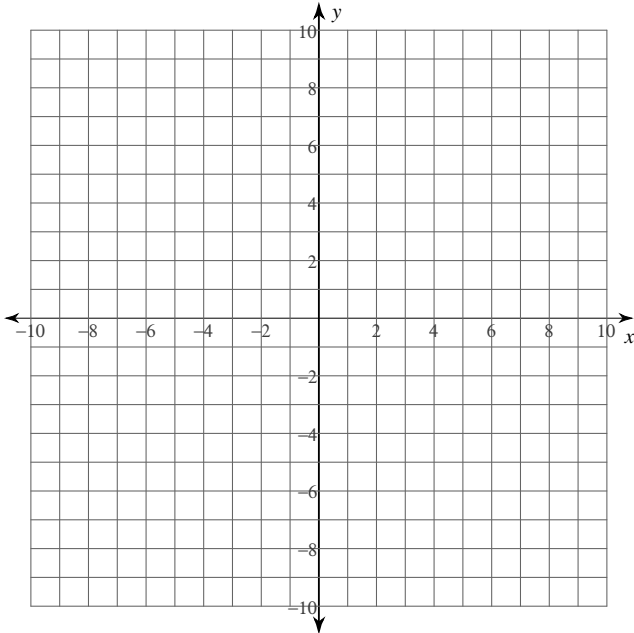
Points in the Coordinate Plane

Date _____ Period _____

Plot each point.

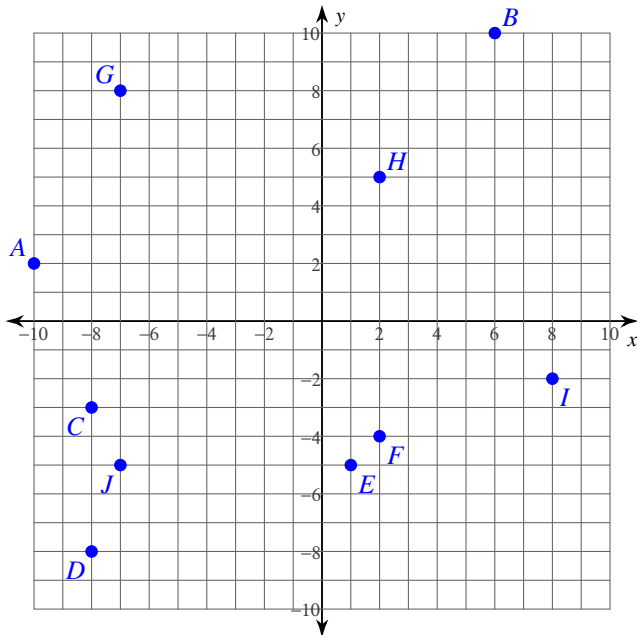
- 1) $J(5, 10)$ $I(1, 9)$ $H(6, -9)$
 $G(-6, 8)$ $F(9, 0)$ $E(-6, 0)$
 $D(-8, -4)$ $C(5, 0)$ $B(-1, -1)$
 $A(-8, -1)$

- 2) $A(7, 10)$ $B(0, 4)$ $C(-1, 10)$
 $D(-6, -6)$ $E(10, 0)$ $F(9, 7)$
 $G(-3, -4)$ $H(-4, -9)$ $I(4, 1)$
 $J(7, -9)$

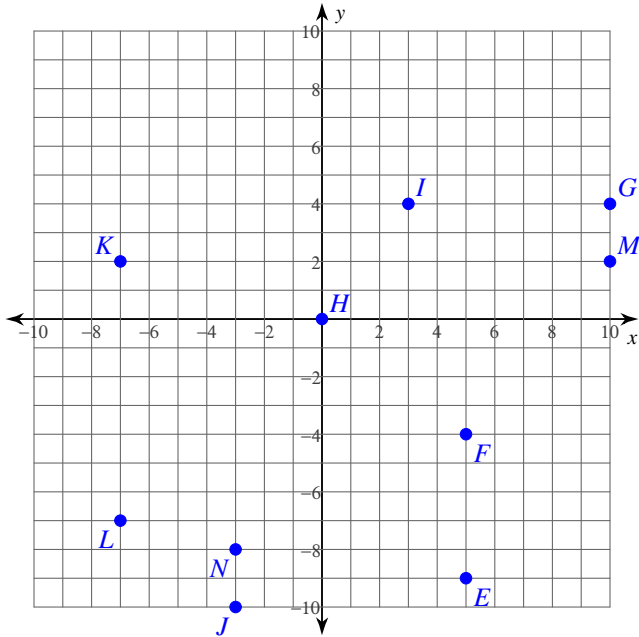


State the coordinates of each point.

3)



4)



State the quadrant or axis that each point lies in.

5) $L(-2, 1)$ $K(-3, -2)$ $J(3, 1)$

6) $T(-3, 5)$ $U(1, 0)$ $V(-5, 5)$

7) $S(5, -7)$ $T(7, 2)$ $U(-5, 4)$

8) $R(7, 0)$ $Q(8, -1)$ $P(3, 0)$

Critical thinking questions:

9) State the coordinates of the endpoints of a line segment that intersects the y -axis.

10) State the coordinates of the endpoints of a line segment that is not parallel to either axis, and does not intersect either axis.

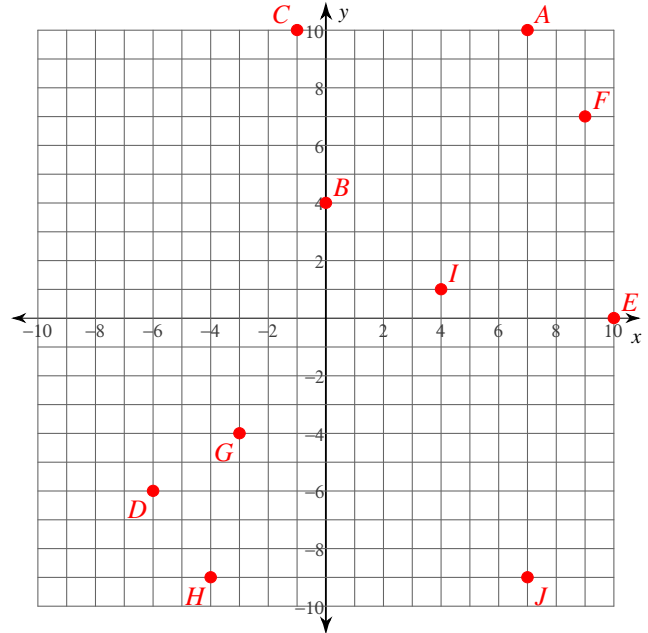
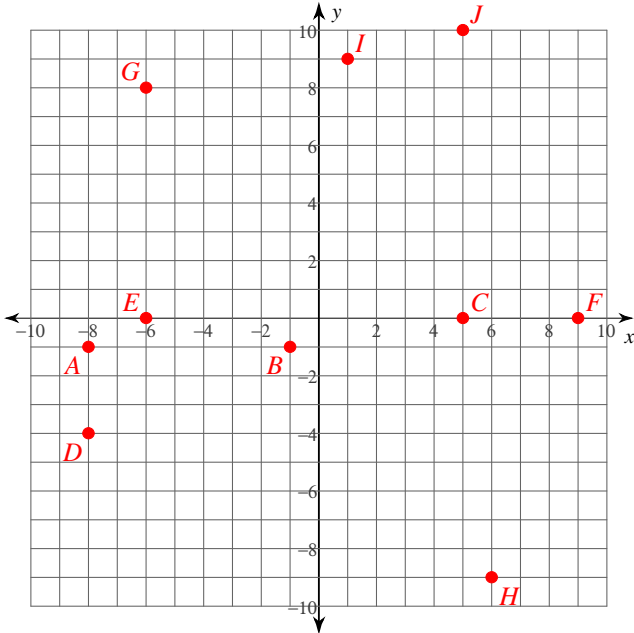
Points in the Coordinate Plane

Date _____ Period _____

Plot each point.

- 1) $J(5, 10)$ $I(1, 9)$ $H(6, -9)$
 $G(-6, 8)$ $F(9, 0)$ $E(-6, 0)$
 $D(-8, -4)$ $C(5, 0)$ $B(-1, -1)$
 $A(-8, -1)$

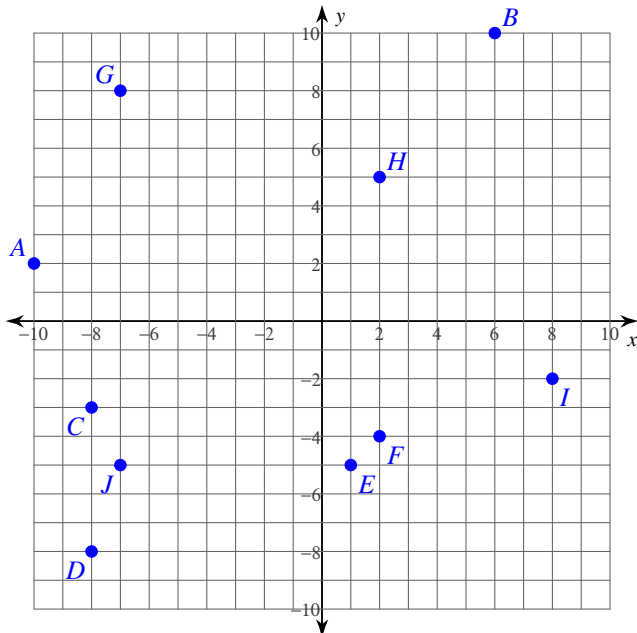
- 2) $A(7, 10)$ $B(0, 4)$ $C(-1, 10)$
 $D(-6, -6)$ $E(10, 0)$ $F(9, 7)$
 $G(-3, -4)$ $H(-4, -9)$ $I(4, 1)$
 $J(7, -9)$



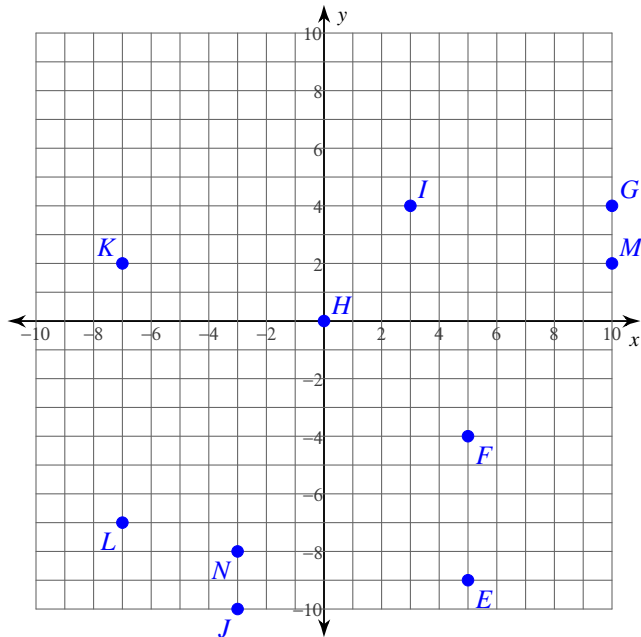
State the coordinates of each point.

3)

- $A(-10, 2)$ $B(6, 10)$ $C(-8, -3)$
 $D(-8, -8)$ $E(1, -5)$ $F(2, -4)$
 $G(-7, 8)$ $H(2, 5)$ $I(8, -2)$
 $J(-7, -5)$



4)



$E(5, -9)$ $F(5, -4)$ $G(10, 4)$
 $H(0, 0)$ $I(3, 4)$ $J(-3, -10)$
 $K(-7, 2)$ $L(-7, -7)$ $M(10, 2)$
 $N(-3, -8)$

State the quadrant or axis that each point lies in.

5) $L(-2, 1)$ $K(-3, -2)$ $J(3, 1)$

L : II K : III J : I

6) $T(-3, 5)$ $U(1, 0)$ $V(-5, 5)$

T : II U : x-axis V : II

7) $S(5, -7)$ $T(7, 2)$ $U(-5, 4)$

S : IV T : I U : II

8) $R(7, 0)$ $Q(8, -1)$ $P(3, 0)$

R : x-axis Q : IV P : x-axis

Critical thinking questions:

9) State the coordinates of the endpoints of a line segment that intersects the y-axis.

Many answers. Ex: $(2, 2)$, $(-2, 2)$

10) State the coordinates of the endpoints of a line segment that is not parallel to either axis, and does not intersect either axis.

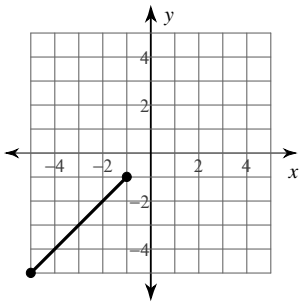
Many answers. Ex: $(2, 2)$, $(3, 3)$

The Midpoint Formula

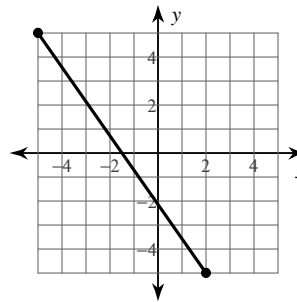
Date _____ Period _____

Find the midpoint of each line segment.

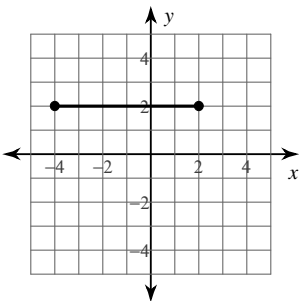
1)



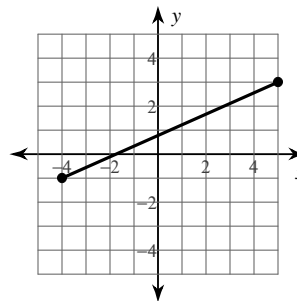
2)



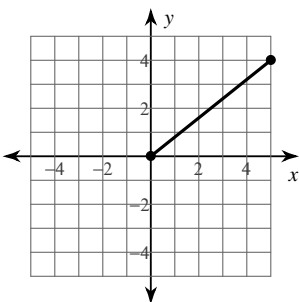
3)



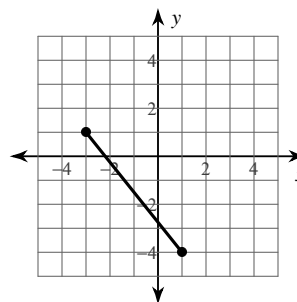
4)



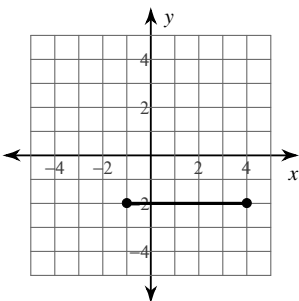
5)



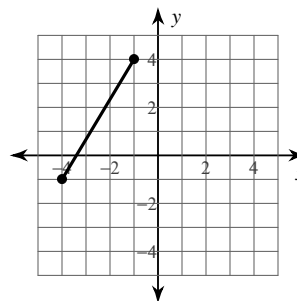
6)



7)



8)



Find the midpoint of the line segment with the given endpoints.

9) $(-4, 4), (5, -1)$

10) $(-1, -6), (-6, 5)$

11) $(2, 4), (1, -3)$

12) $(-4, 4), (-2, 2)$

13) $(5, 2), (-4, -3)$

14) $(-1, 1), (5, -5)$

15) $(2, -1), (-6, 0)$

16) $(-3.1, -2.8), (-4.92, -3.3)$

17) $(-5.1, -2), (1.4, 1.7)$

18) $(4.9, -1.3), (-5.2, -0.6)$

19) $(5.1, 5.71), (6, 3.6)$

20) $(3.1, -2.1), (-0.52, -0.6)$

Find the other endpoint of the line segment with the given endpoint and midpoint.

21) Endpoint: $(-1, 9)$, midpoint: $(-9, -10)$

22) Endpoint: $(2, 5)$, midpoint: $(5, 1)$

23) Endpoint: $(5, 2)$, midpoint: $(-10, -2)$

24) Endpoint: $(9, -10)$, midpoint: $(4, 8)$

25) Endpoint: $(-9, 7)$, midpoint: $(10, -3)$

26) Endpoint: $(-6, 4)$, midpoint: $(4, 8)$

Critical thinking questions:

27) Find the point that is one-fourth of the way from $(2, 4)$ to $(10, 8)$.

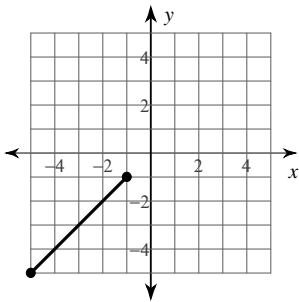
28) One endpoint of a line segment is $(8, -1)$. The point $(5, -2)$ is one-third of the way from that endpoint to the other endpoint. Find the other endpoint.

The Midpoint Formula

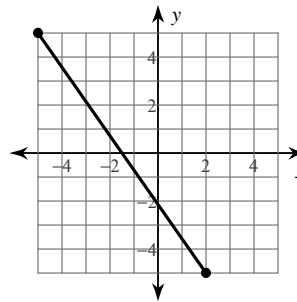
Date _____ Period _____

Find the midpoint of each line segment.

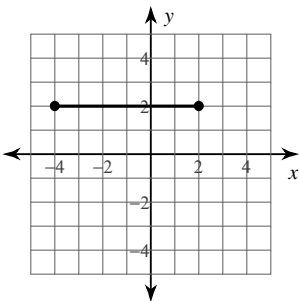
1) $(-3, -3)$



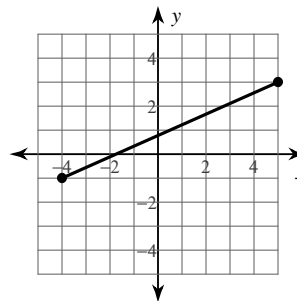
2) $(-1\frac{1}{2}, 0)$



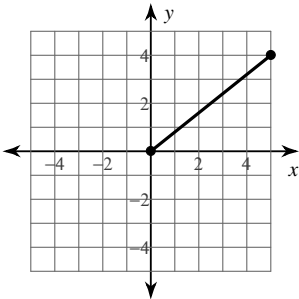
3) $(-1, 2)$



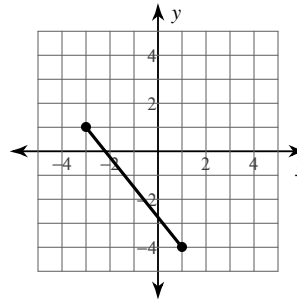
4) $(\frac{1}{2}, 1)$



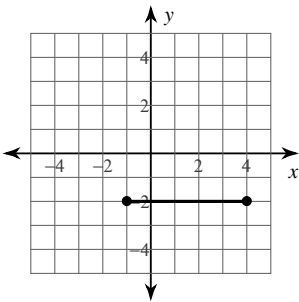
5) $(2\frac{1}{2}, 2)$



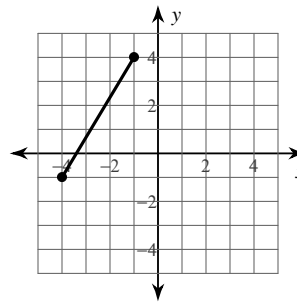
6) $(-1, -1\frac{1}{2})$



7) $(1\frac{1}{2}, -2)$



8) $(-2\frac{1}{2}, 1\frac{1}{2})$



Find the midpoint of the line segment with the given endpoints.

9) $(-4, 4), (5, -1)$

$$(\frac{1}{2}, 1\frac{1}{2})$$

10) $(-1, -6), (-6, 5)$

$$(-3\frac{1}{2}, -\frac{1}{2})$$

11) $(2, 4), (1, -3)$

$$(1\frac{1}{2}, \frac{1}{2})$$

12) $(-4, 4), (-2, 2)$

$$(-3, 3)$$

13) $(5, 2), (-4, -3)$

$$\left(\frac{1}{2}, -\frac{1}{2}\right)$$

15) $(2, -1), (-6, 0)$

$$\left(-2, -\frac{1}{2}\right)$$

17) $(-5.1, -2), (1.4, 1.7)$

$$(-1.85, -0.15)$$

19) $(5.1, 5.71), (6, 3.6)$

$$(5.55, 4.655)$$

14) $(-1, 1), (5, -5)$

$$(2, -2)$$

16) $(-3.1, -2.8), (-4.92, -3.3)$

$$(-4.01, -3.05)$$

18) $(4.9, -1.3), (-5.2, -0.6)$

$$(-0.15, -0.95)$$

20) $(3.1, -2.1), (-0.52, -0.6)$

$$(1.29, -1.35)$$

Find the other endpoint of the line segment with the given endpoint and midpoint.

21) Endpoint: $(-1, 9)$, midpoint: $(-9, -10)$

$$(-17, -29)$$

22) Endpoint: $(2, 5)$, midpoint: $(5, 1)$

$$(8, -3)$$

23) Endpoint: $(5, 2)$, midpoint: $(-10, -2)$

$$(-25, -6)$$

24) Endpoint: $(9, -10)$, midpoint: $(4, 8)$

$$(-1, 26)$$

25) Endpoint: $(-9, 7)$, midpoint: $(10, -3)$

$$(29, -13)$$

26) Endpoint: $(-6, 4)$, midpoint: $(4, 8)$

$$(14, 12)$$

Critical thinking questions:

27) Find the point that is one-fourth of the way from $(2, 4)$ to $(10, 8)$.

$$(4, 5)$$

28) One endpoint of a line segment is $(8, -1)$. The point $(5, -2)$ is one-third of the way from that endpoint to the other endpoint. Find the other endpoint.

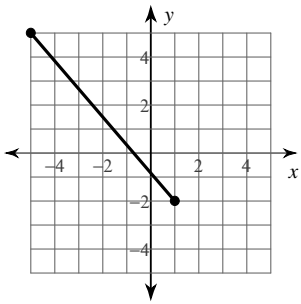
$$(-1, -4)$$

The Distance Formula

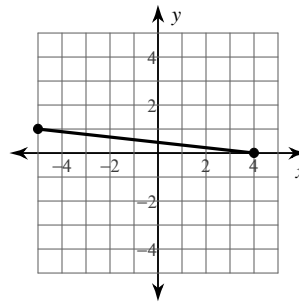
Date _____ Period _____

Find the distance between each pair of points. Round your answer to the nearest tenth, if necessary.

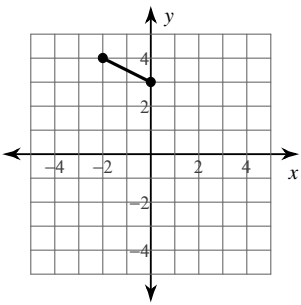
1)



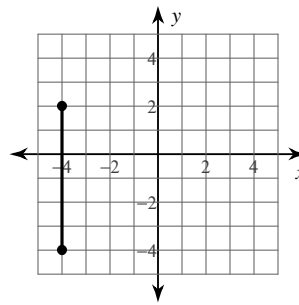
2)



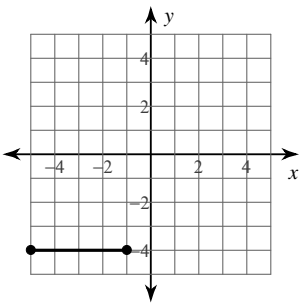
3)



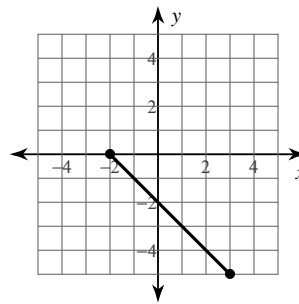
4)



5)



6)



7) $(-2, 3), (-7, -7)$

8) $(2, -9), (-1, 4)$

9) $(5, 9), (-7, -7)$

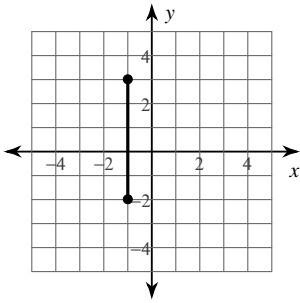
10) $(8, 5), (-1, 3)$

11) $(-10, -7), (-8, 1)$

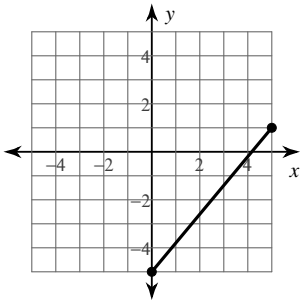
12) $(-6, -10), (-2, -10)$

Find the distance between each pair of points.

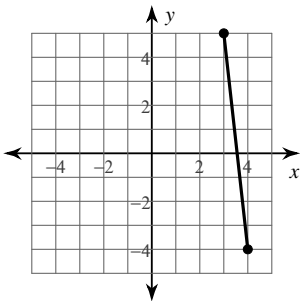
13)



15)



17)



19) $(0, -2)$, $(-5, -1)$

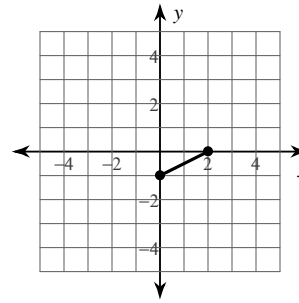
21) $(3, 8)$, $(9, 10)$

23) $(-8, 10)$, $(-6, 7)$

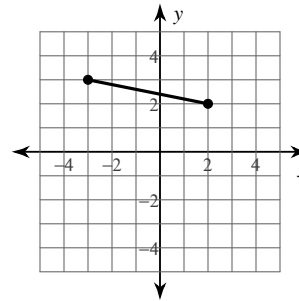
Critical thinking questions:

25) Name a point that is $\sqrt{2}$ away from $(-1, 5)$.

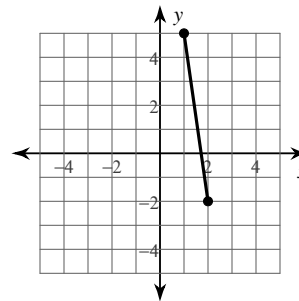
14)



16)



18)



20) $(6, 4)$, $(-5, -1)$

22) $(10, 1)$, $(9, -4)$

24) $(-5, 6)$, $(8, -4)$

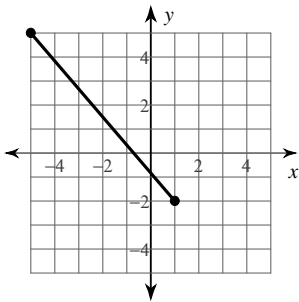
26) Name a point that is between 50 and 60 units away from $(7, -2)$ and state the distance between the two points.

The Distance Formula

Date _____ Period _____

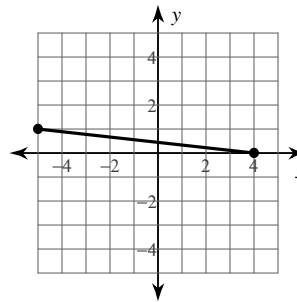
Find the distance between each pair of points. Round your answer to the nearest tenth, if necessary.

1)



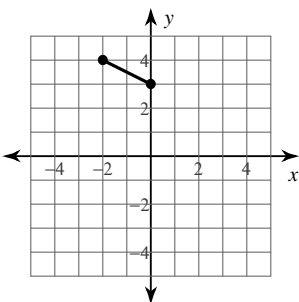
9.2

2)



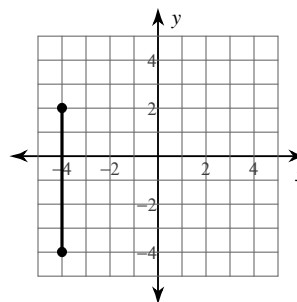
9.1

3)



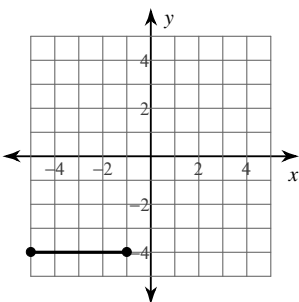
2.2

4)



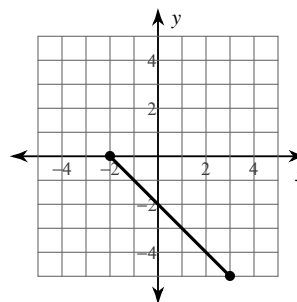
6

5)



4

6)



7.1

7) $(-2, 3), (-7, -7)$

11.2

8) $(2, -9), (-1, 4)$

13.3

9) $(5, 9), (-7, -7)$

20

10) $(8, 5), (-1, 3)$

9.2

11) $(-10, -7), (-8, 1)$

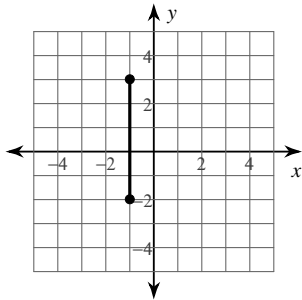
8.2

12) $(-6, -10), (-2, -10)$

4

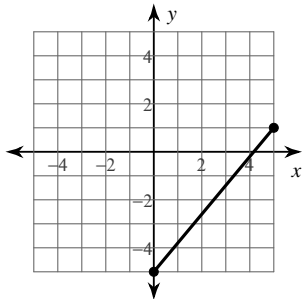
Find the distance between each pair of points.

13)



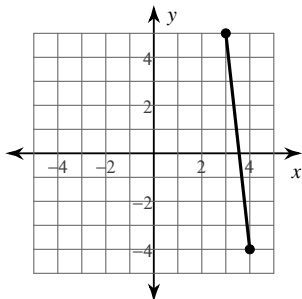
5

15)



$\sqrt{61}$

17)



$\sqrt{82}$

19) $(0, -2), (-5, -1)$

$\sqrt{26}$

21) $(3, 8), (9, 10)$

$2\sqrt{10}$

23) $(-8, 10), (-6, 7)$

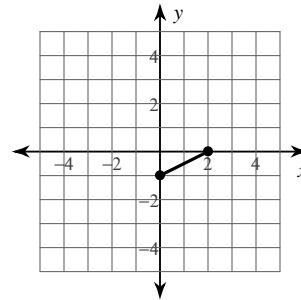
$\sqrt{13}$

Critical thinking questions:

25) Name a point that is $\sqrt{2}$ away from $(-1, 5)$.

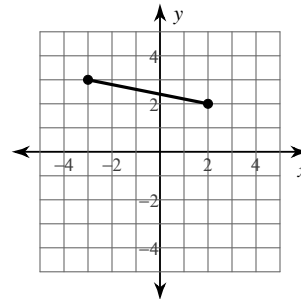
$(0, 6), (0, 4), (-2, 6),$ or $(-2, 4)$

14)



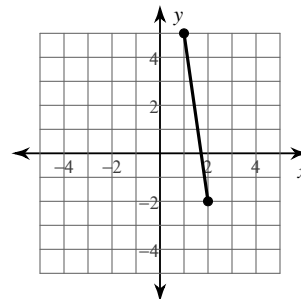
$\sqrt{5}$

16)



$\sqrt{26}$

18)



$5\sqrt{2}$

20) $(6, 4), (-5, -1)$

$\sqrt{146}$

22) $(10, 1), (9, -4)$

$\sqrt{26}$

24) $(-5, 6), (8, -4)$

$\sqrt{269}$

26) Name a point that is between 50 and 60 units away from $(7, -2)$ and state the distance between the two points.

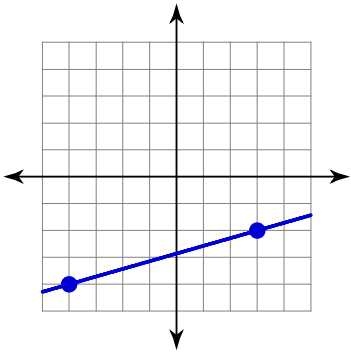
Many answers. Ex: $(60, -2)$; 53 units

Parallel Lines in the Coordinate Plane

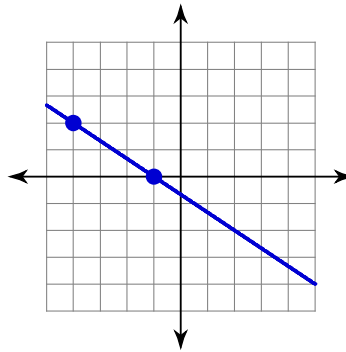
Date _____ Period _____

Find the slope of each line.

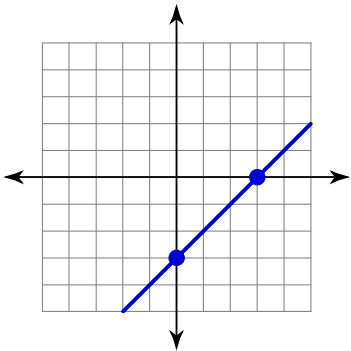
1)



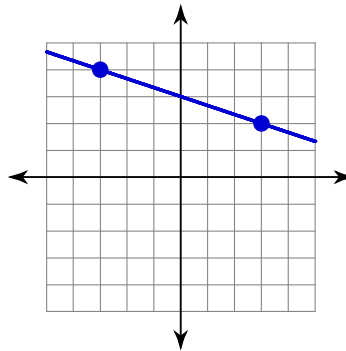
2)



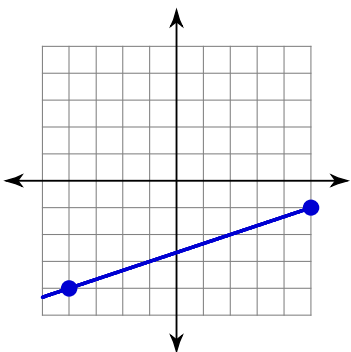
3)



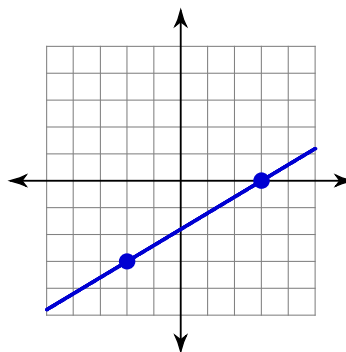
4)



5)



6)



7) $y = -\frac{7}{3}x - 3$

8) $y = \frac{1}{2}x - 2$

9) $y = -x - 3$

10) $y = -2x - 2$

11) $y = \frac{2}{5}x + 1$

12) $y = 4x - 2$

Write the slope-intercept form of the equation of each line given the slope and y-intercept.

13) Slope = -3 , y-intercept = -1

14) Slope = $\frac{5}{3}$, y-intercept = -3

15) Slope = -1 , y-intercept = 3

16) Slope = $\frac{2}{5}$, y-intercept = 1

17) Slope = 3 , y-intercept = 0

18) Slope = $-\frac{1}{2}$, y-intercept = 4

Find the slope of a line parallel to each given line.

19) $y = 2x - 5$

20) $y = 2x - 4$

21) $y = \frac{4}{5}x - 3$

22) $y = -\frac{8}{3}x - 4$

23) $y = -x - 2$

24) $y = -2x - 1$

Critical thinking questions:

25) Fill in the blank so that the lines are not parallel:

Line A goes through _____ Line B goes through _____

(0, 8) and (-2, 0) (1, 2) and (3, ___)

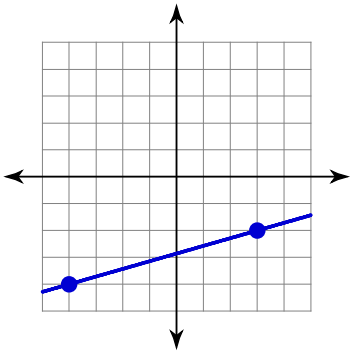
26) Write the equations of five lines that are parallel to $y = \frac{x}{2} - 6$

Parallel Lines in the Coordinate Plane

Date _____ Period _____

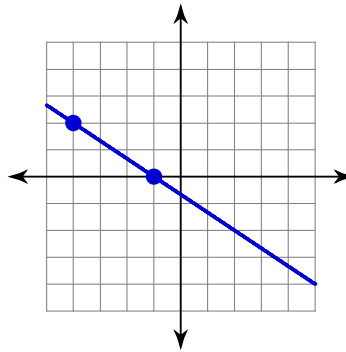
Find the slope of each line.

1)



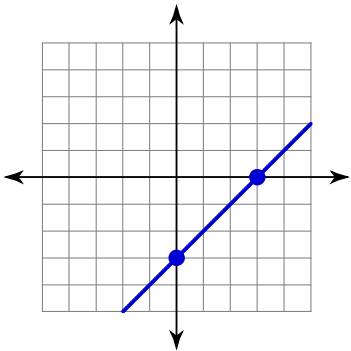
$$\frac{2}{7}$$

2)



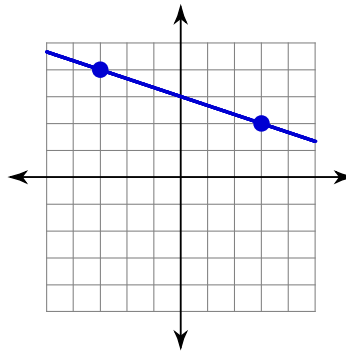
$$-\frac{2}{3}$$

3)



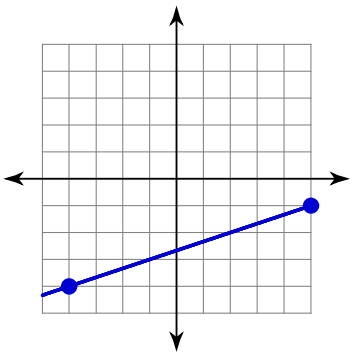
$$1$$

4)



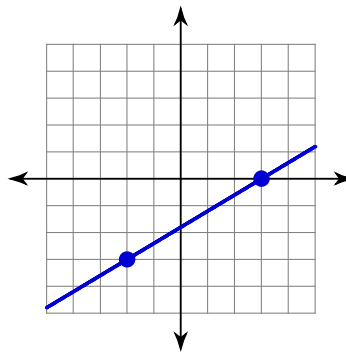
$$-\frac{1}{3}$$

5)



$$\frac{1}{3}$$

6)



$$\frac{3}{5}$$

7) $y = -\frac{7}{3}x - 3$

$$-\frac{7}{3}$$

8) $y = \frac{1}{2}x - 2$

$$\frac{1}{2}$$

9) $y = -x - 3$

 -1

10) $y = -2x - 2$

 -2

11) $y = \frac{2}{5}x + 1$

 $\frac{2}{5}$

12) $y = 4x - 2$

 4 **Write the slope-intercept form of the equation of each line given the slope and y-intercept.**

13) Slope = -3 , y-intercept = -1

$y = -3x - 1$

14) Slope = $\frac{5}{3}$, y-intercept = -3

$y = \frac{5}{3}x - 3$

15) Slope = -1 , y-intercept = 3

$y = -x + 3$

16) Slope = $\frac{2}{5}$, y-intercept = 1

$y = \frac{2}{5}x + 1$

17) Slope = 3 , y-intercept = 0

$y = 3x$

18) Slope = $-\frac{1}{2}$, y-intercept = 4

$y = -\frac{1}{2}x + 4$

Find the slope of a line parallel to each given line.

19) $y = 2x - 5$

 2

20) $y = 2x - 4$

 2

21) $y = \frac{4}{5}x - 3$

 $\frac{4}{5}$

22) $y = -\frac{8}{3}x - 4$

 $-\frac{8}{3}$

23) $y = -x - 2$

 -1

24) $y = -2x - 1$

 -2 **Critical thinking questions:**

25) Fill in the blank so that the lines are not parallel:

Line A goes through _____ Line B goes through _____

 $(0, 8)$ and $(-2, 0)$ $(1, 2)$ and $(3, \underline{\quad})$ **Anything but 10**

26) Write the equations of five lines that are

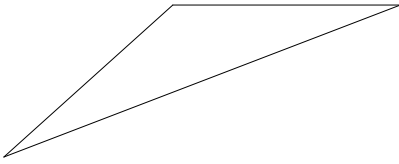
parallel to $y = \frac{x}{2} - 6$ **Many answers. Ex: $y = \frac{x}{2} + 4$**

Classifying Triangles

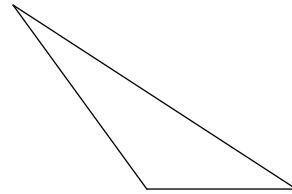
Date _____ Period _____

Classify each triangle by each angles and sides. Base your decision on the actual lengths of the sides and the measures of the angles.

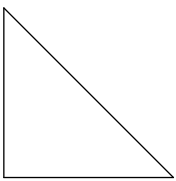
1)



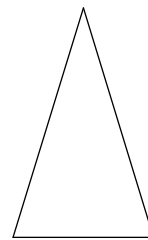
2)



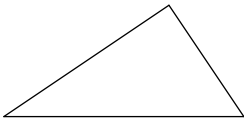
3)



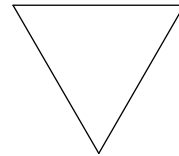
4)



5)

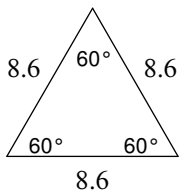


6)

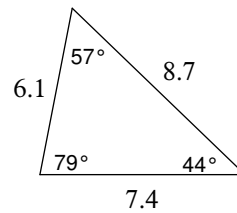


Classify each triangle by each angles and sides.

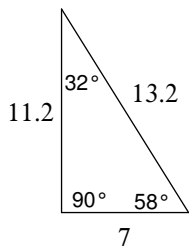
7)



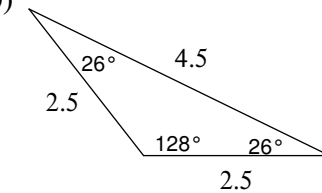
8)



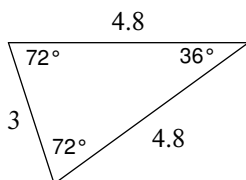
9)



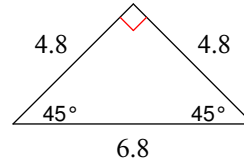
10)



11)

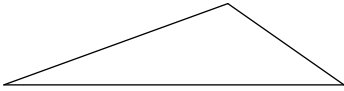


12)

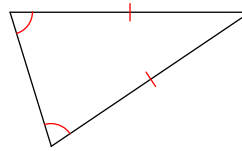


Classify each triangle by each angles and sides. Equal sides and equal angles, if any, are indicated in each diagram.

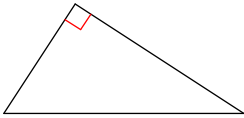
13)



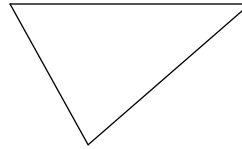
14)



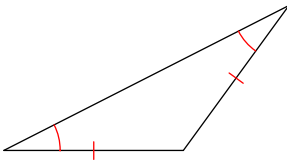
15)



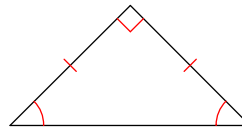
16)



17)



18)



Sketch an example of the type of triangle described. Mark the triangle to indicate what information is known. If no triangle can be drawn, write "not possible."

19) acute isosceles

20) right scalene

21) right isosceles

22) right equilateral

23) acute scalene

24) obtuse scalene

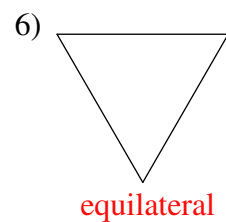
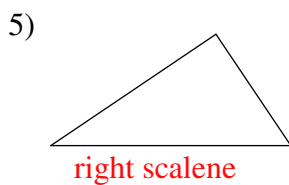
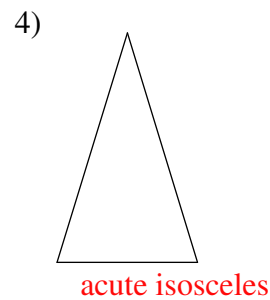
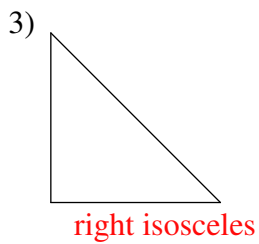
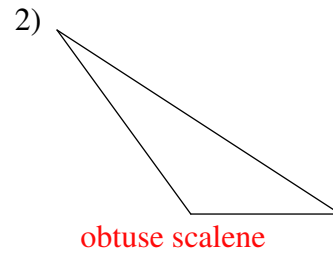
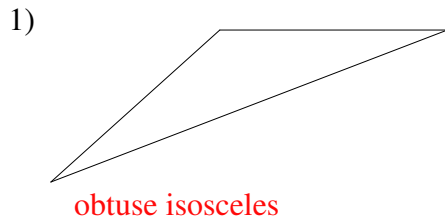
25) right obtuse

26) equilateral

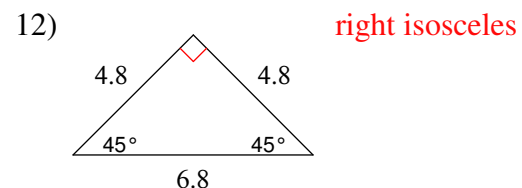
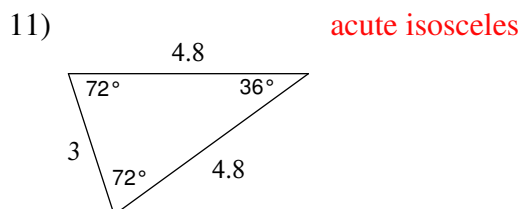
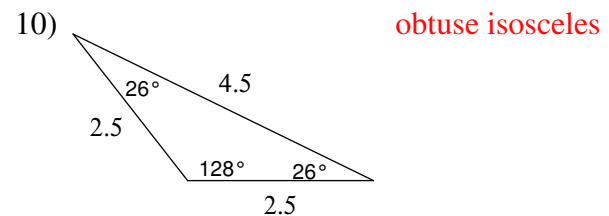
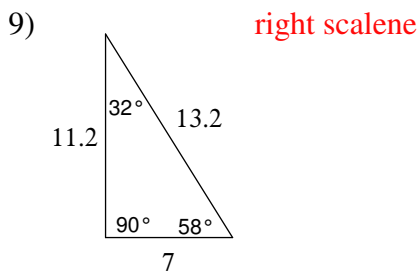
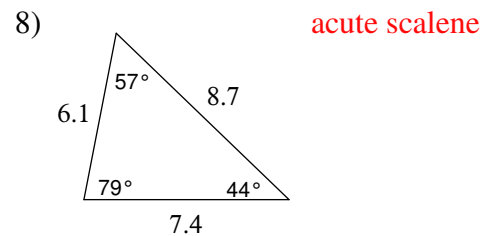
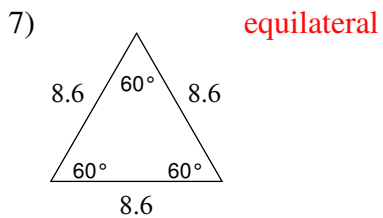
Classifying Triangles

Date _____ Period _____

Classify each triangle by each angles and sides. Base your decision on the actual lengths of the sides and the measures of the angles.

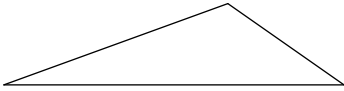


Classify each triangle by each angles and sides.

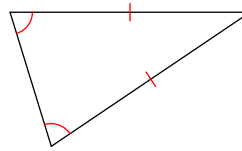


Classify each triangle by each angles and sides. Equal sides and equal angles, if any, are indicated in each diagram.

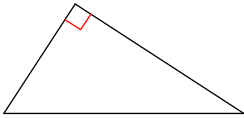
13) obtuse scalene



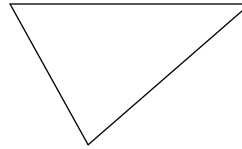
14) acute isosceles



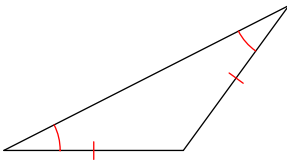
15) right scalene



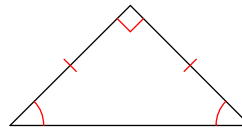
16) acute scalene



17) obtuse isosceles

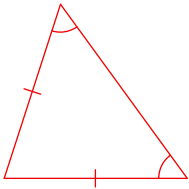


18) right isosceles



Sketch an example of the type of triangle described. Mark the triangle to indicate what information is known. If no triangle can be drawn, write "not possible."

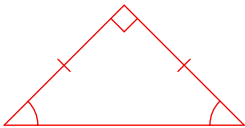
19) acute isosceles



20) right scalene



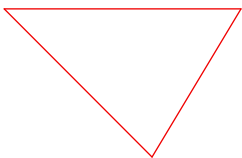
21) right isosceles



22) right equilateral

Not possible

23) acute scalene



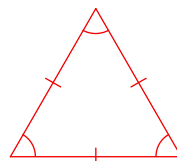
24) obtuse scalene



25) right obtuse

Not possible

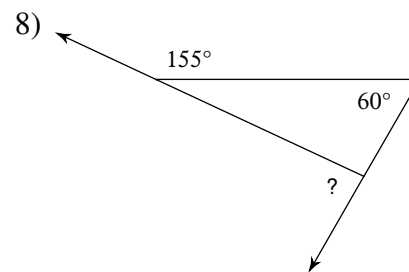
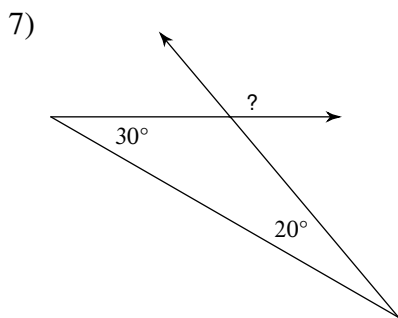
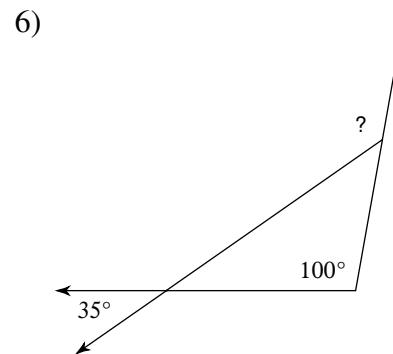
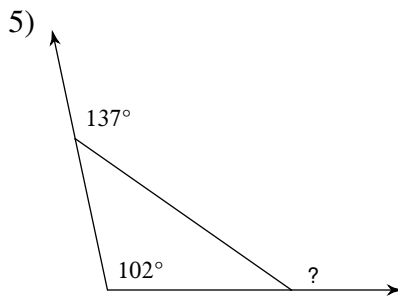
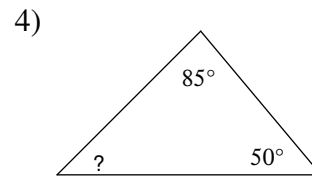
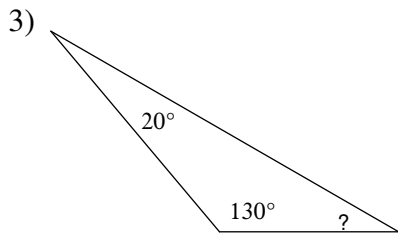
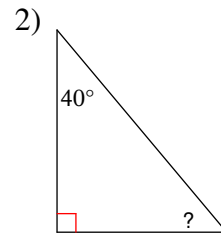
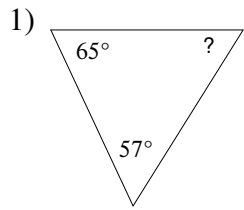
26) equilateral



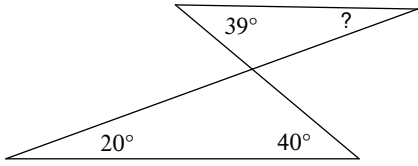
Angles in a Triangle

Date _____ Period _____

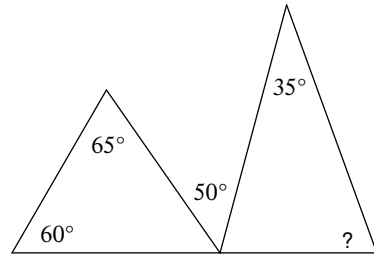
Find the measure of each angle indicated.



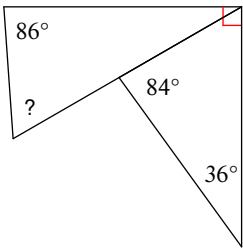
9)



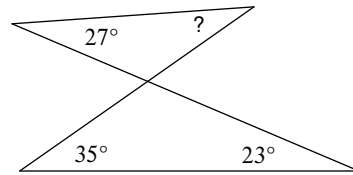
10)



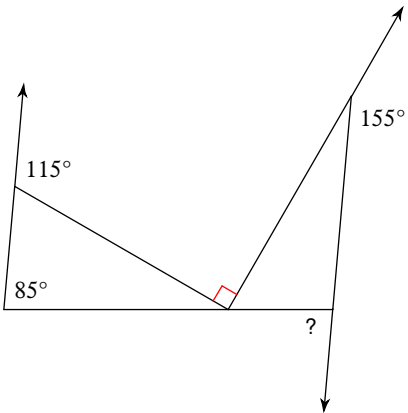
11)



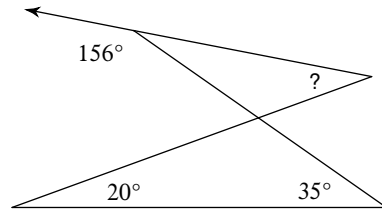
12)



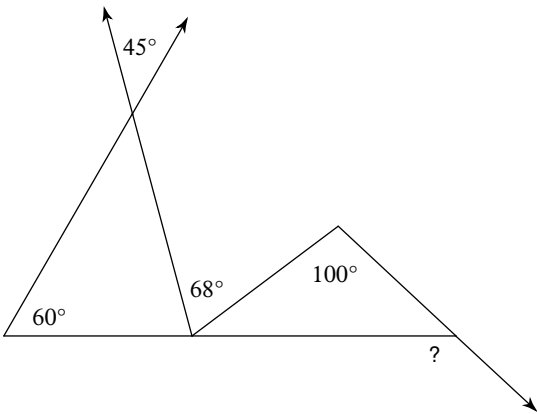
13)



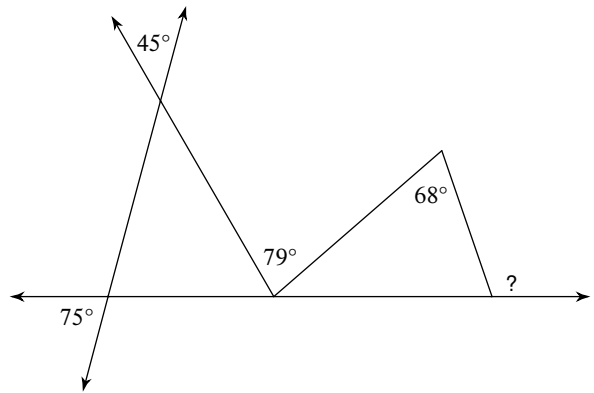
14)



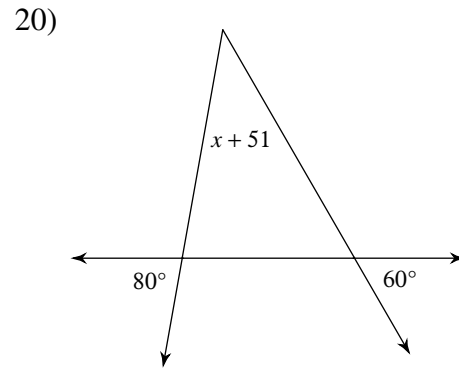
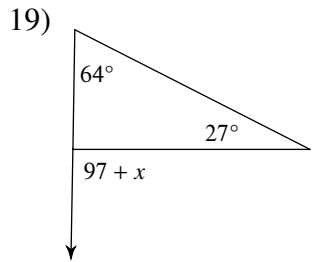
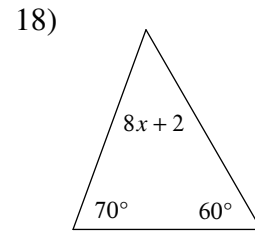
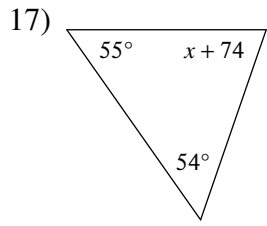
15)



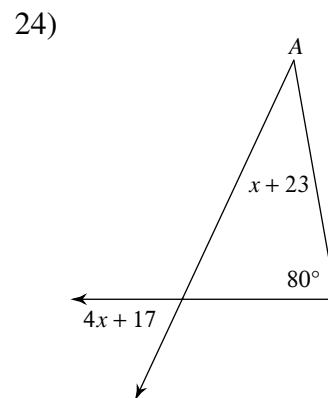
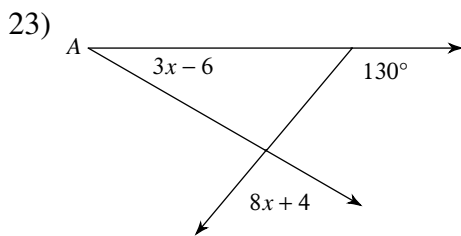
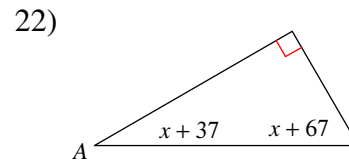
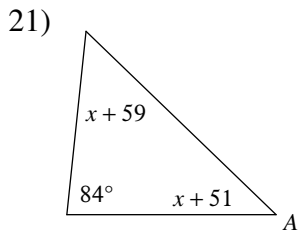
16)



Solve for x .



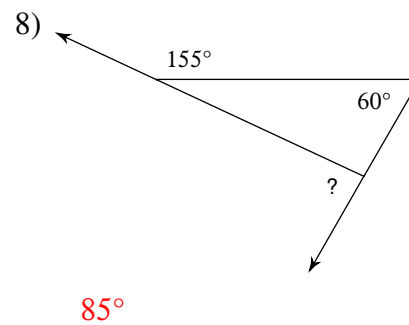
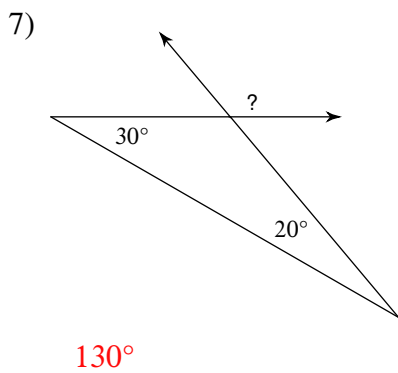
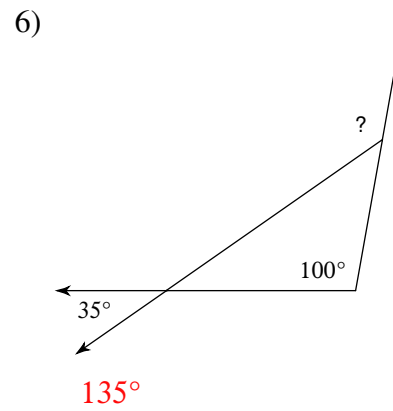
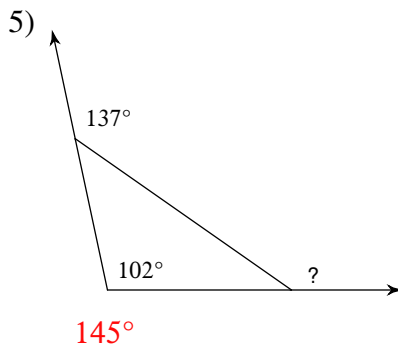
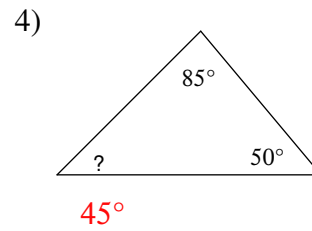
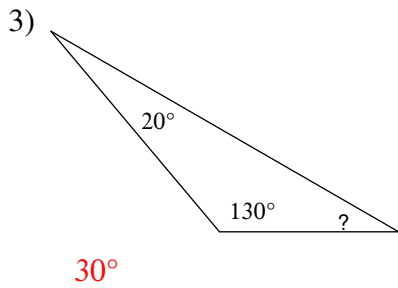
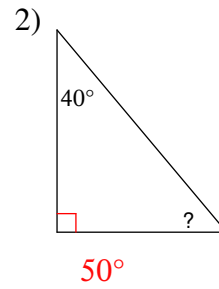
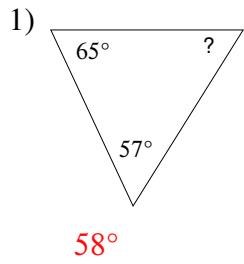
Find the measure of angle A.



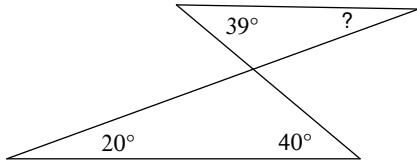
Angles in a Triangle

Date _____ Period _____

Find the measure of each angle indicated.

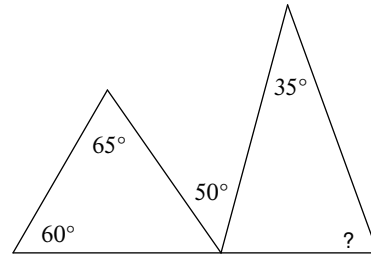


9)



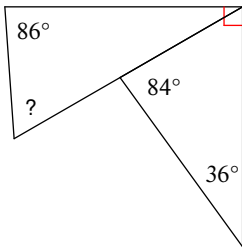
21°

10)



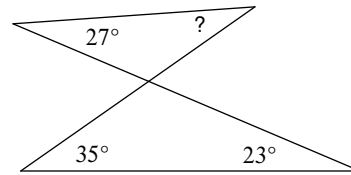
70°

11)



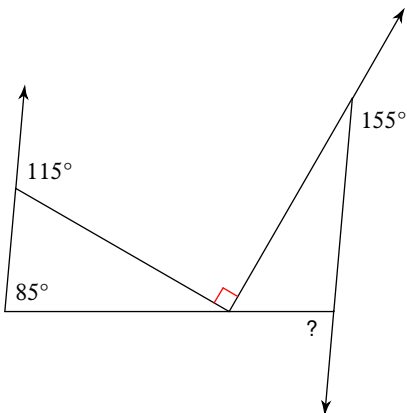
64°

12)



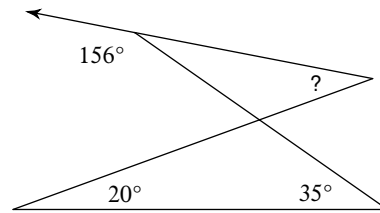
31°

13)



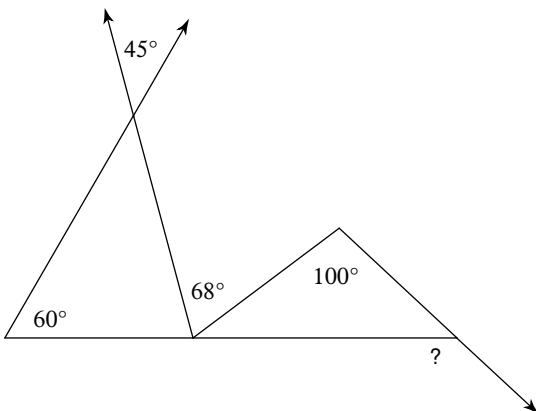
85°

14)



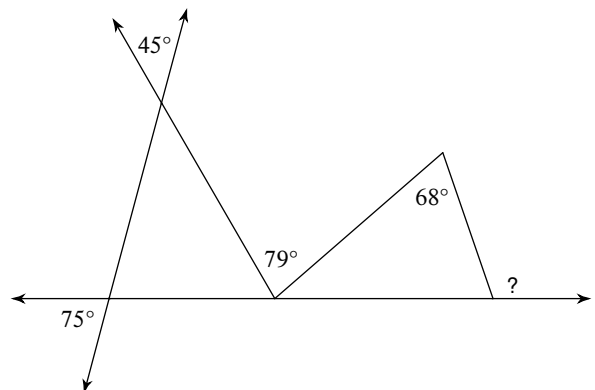
31°

15)



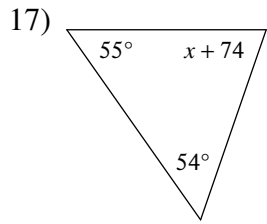
137°

16)

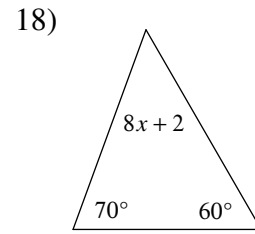


109°

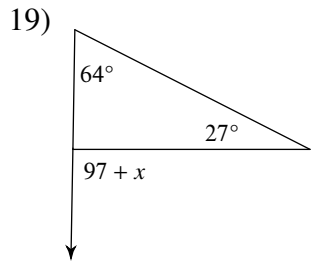
Solve for x .



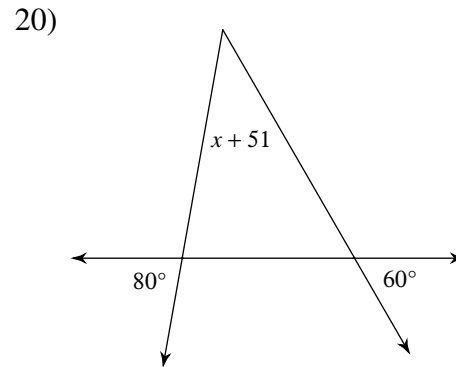
-3



6

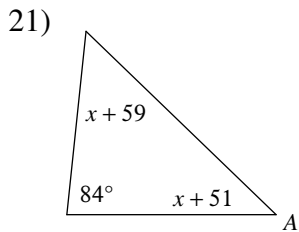


-6

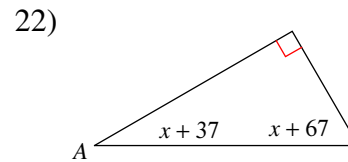


-11

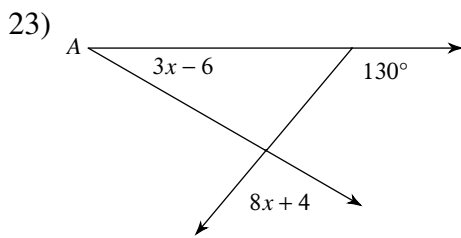
Find the measure of angle A.



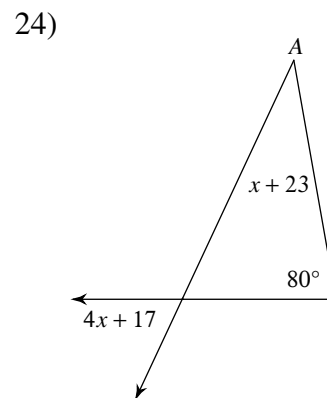
44°



30°



30°

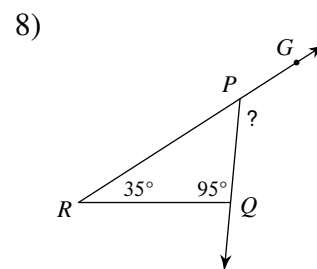
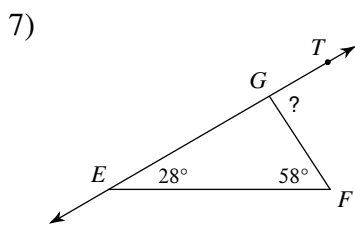
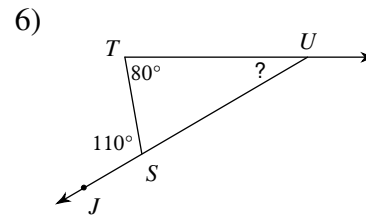
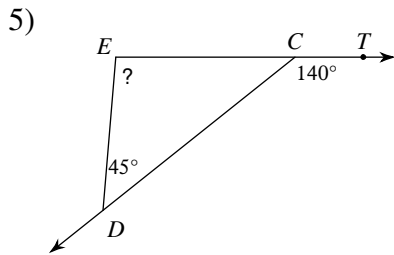
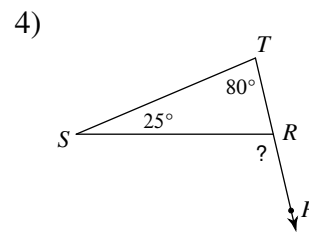
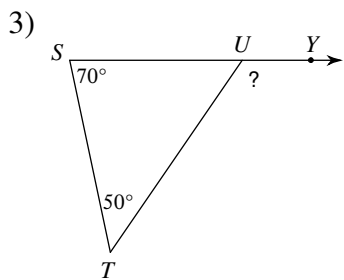
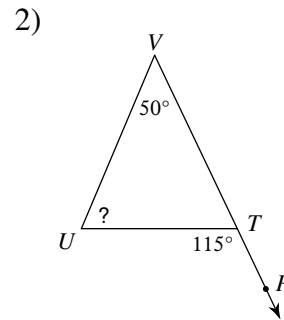
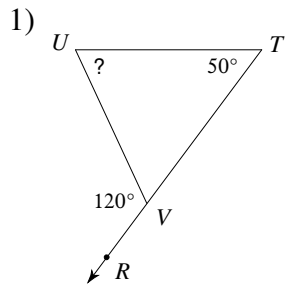


35°

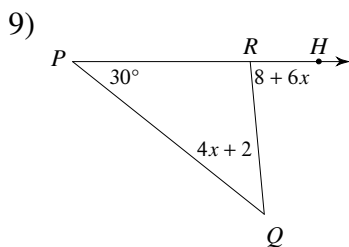
The Exterior Angle Theorem

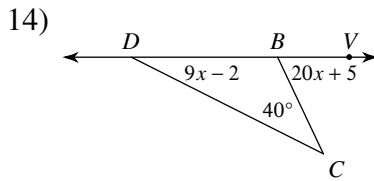
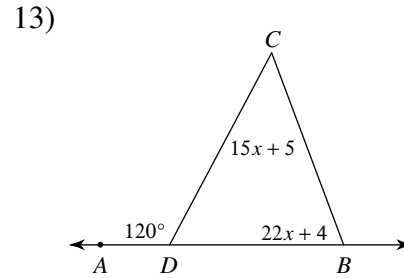
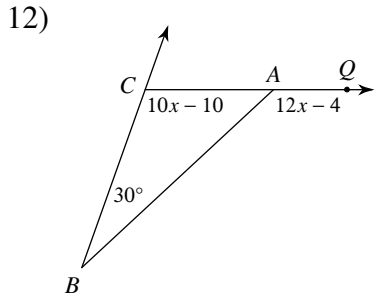
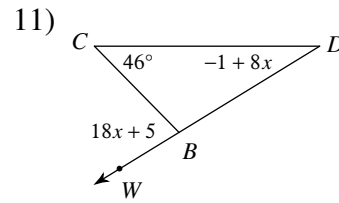
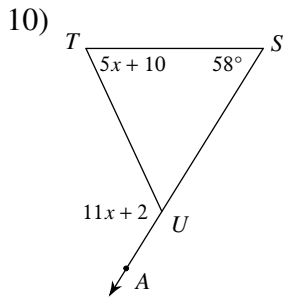
Date _____ Period _____

Find the measure of each angle indicated.



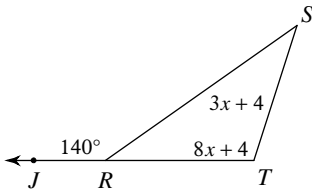
Solve for x .



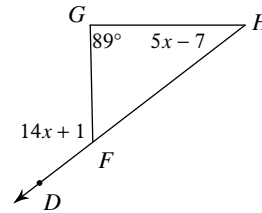


Find the measure of the angle indicated.

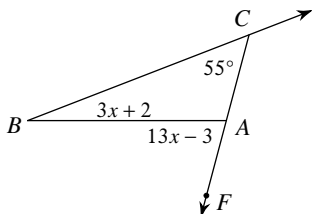
15) Find $m\angle S$.



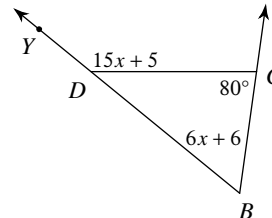
16) Find $m\angle H$.



17) Find $m\angle FAB$.



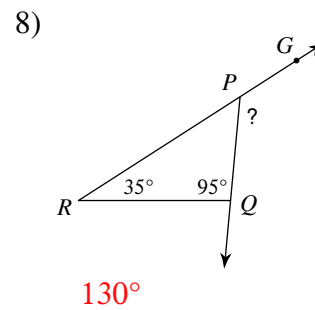
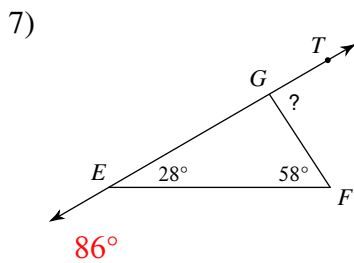
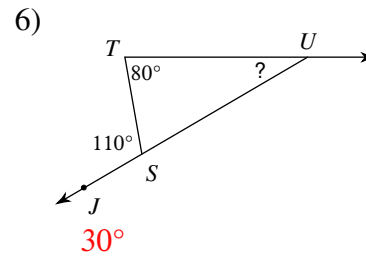
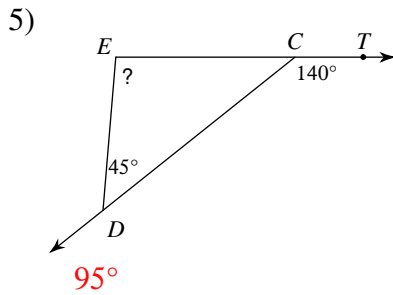
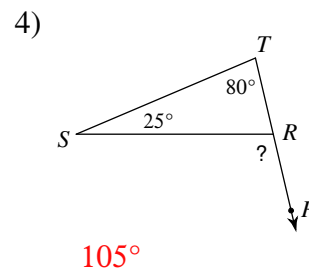
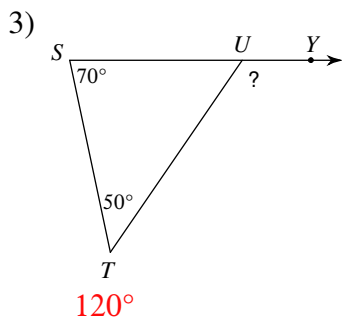
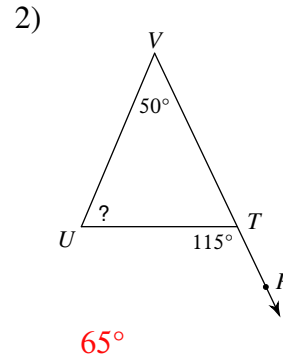
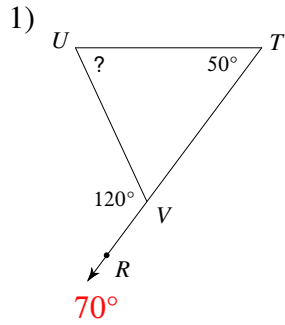
18) Find $m\angle YDC$.



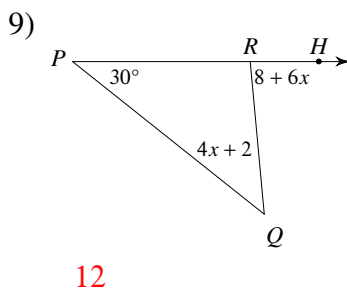
The Exterior Angle Theorem

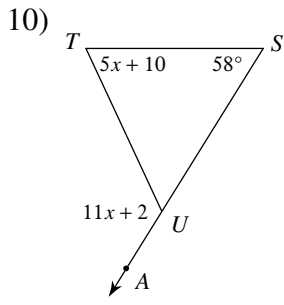
Date _____ Period _____

Find the measure of each angle indicated.

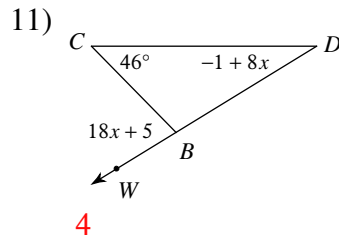


Solve for x .

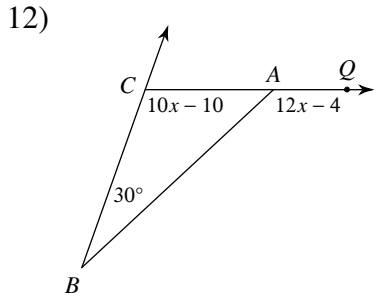




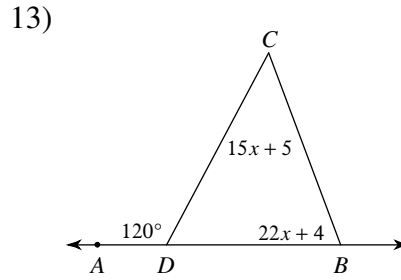
11



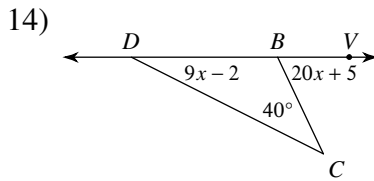
4



12



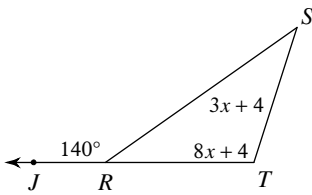
3



3

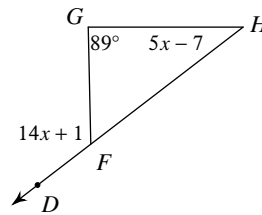
Find the measure of the angle indicated.

15) Find $m\angle S$.



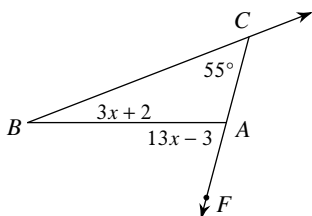
40°

16) Find $m\angle H$.



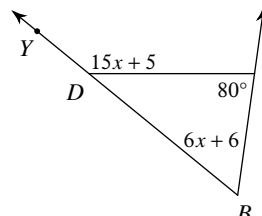
38°

17) Find $m\angle FAB$.



75°

18) Find $m\angle YDC$.



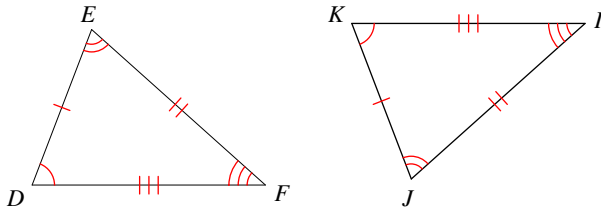
140°

Congruence and Triangles

Date _____ Period _____

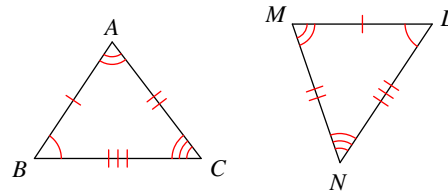
Complete each congruence statement by naming the corresponding angle or side.

1) $\triangle DEF \cong \triangle KJI$



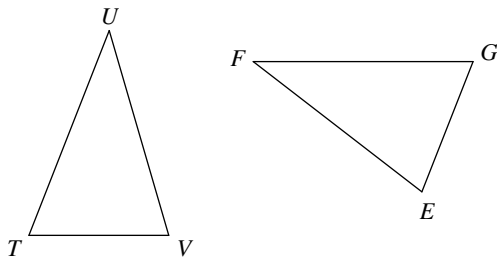
$\overline{FD} \cong ?$

2) $\triangle BAC \cong \triangle LMN$



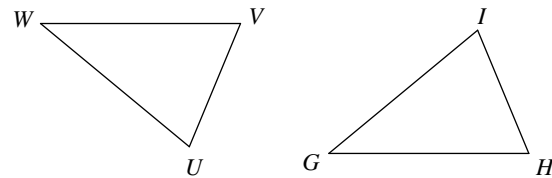
$\angle A \cong ?$

3) $\triangle TUV \cong \triangle GFE$



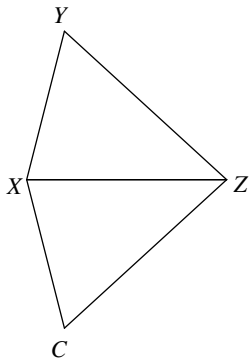
$\angle U \cong ?$

4) $\triangle WVU \cong \triangle GHI$



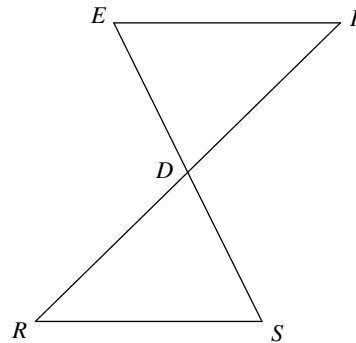
$\angle W \cong ?$

5) $\triangle ZXY \cong \triangle ZXC$



$\angle Y \cong ?$

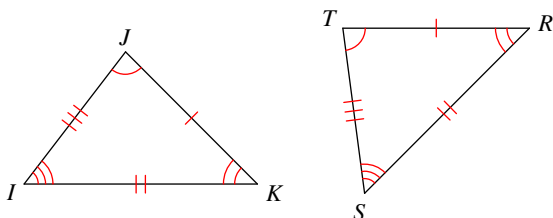
6) $\triangle DEF \cong \triangle DSR$



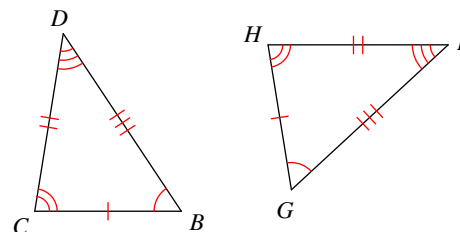
$\angle F \cong ?$

Write a statement that indicates that the triangles in each pair are congruent.

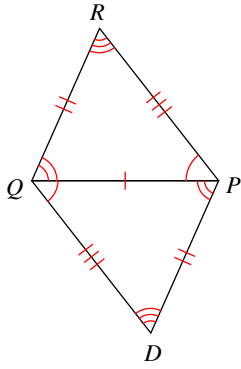
7)



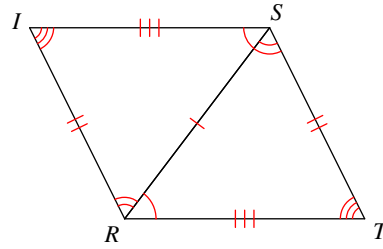
8)



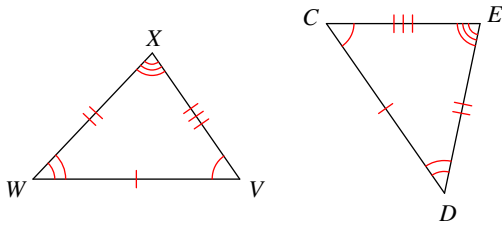
9)



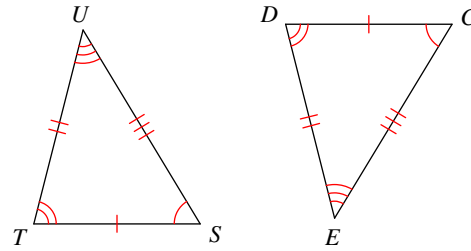
10)



11)

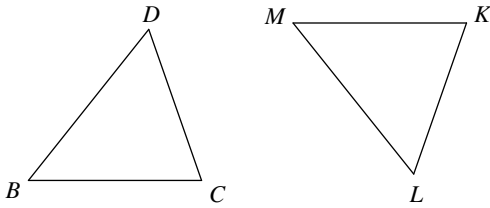


12)

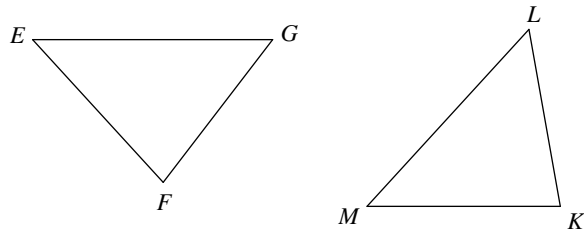


Mark the angles and sides of each pair of triangles to indicate that they are congruent.

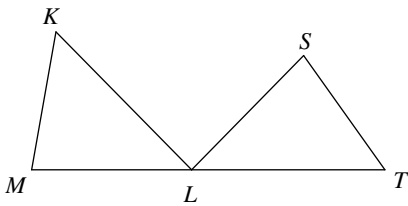
13) $\triangle BDC \cong \triangle MLK$



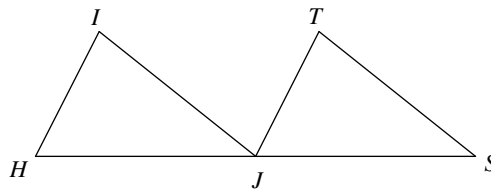
14) $\triangle GFE \cong \triangle LKM$



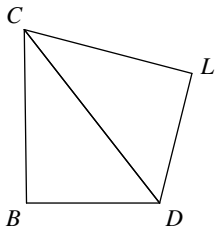
15) $\triangle MKL \cong \triangle STL$



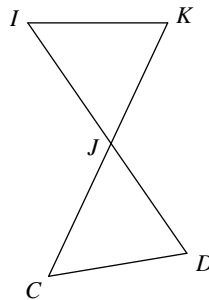
16) $\triangle HIJ \cong \triangle JTS$



17) $\triangle CDB \cong \triangle CDL$



18) $\triangle JIK \cong \triangle JCD$



Congruence and Triangles

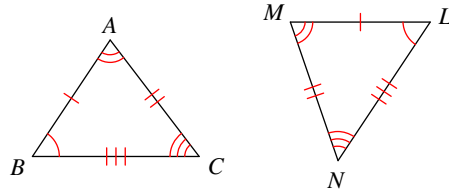
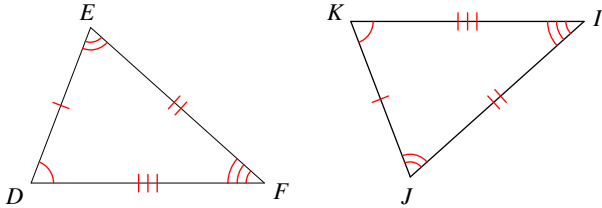
Date _____ Period _____

Complete each congruence statement by naming the corresponding angle or side.

1) $\triangle DEF \cong \triangle KJI$

\overline{IK} 2) $\triangle BAC \cong \triangle LMN$

$\angle M$



$\overline{FD} \cong ?$

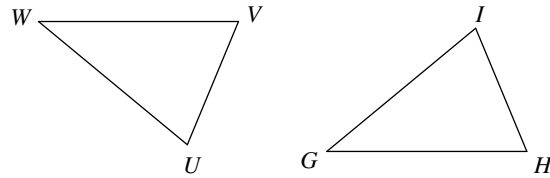
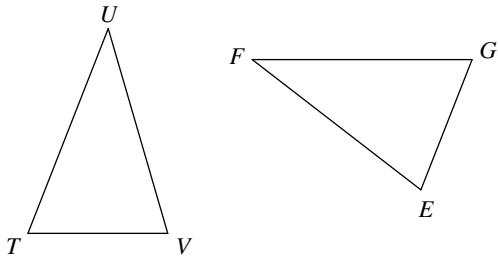
$\angle A \cong ?$

3) $\triangle TUV \cong \triangle GFE$

$\angle F$

4) $\triangle WVU \cong \triangle GHI$

$\angle G$

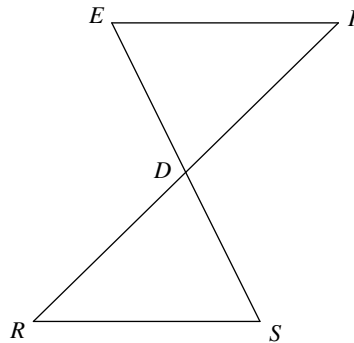
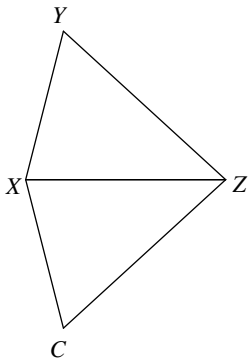


$\angle U \cong ?$

$\angle W \cong ?$

5) $\triangle ZXY \cong \triangle ZXC$ $\angle C$

6) $\triangle DEF \cong \triangle DSR$ $\angle R$



$\angle Y \cong ?$

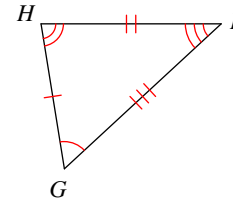
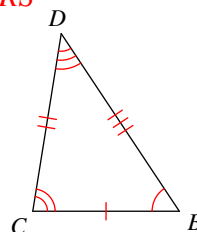
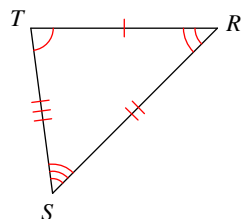
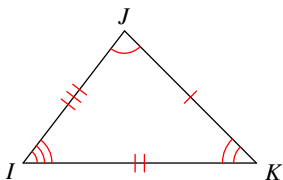
$\angle F \cong ?$

Write a statement that indicates that the triangles in each pair are congruent.

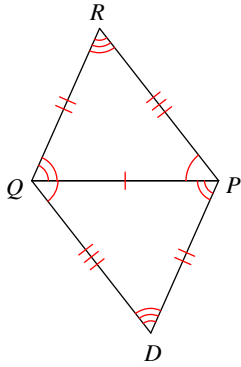
7)

$\triangle JKI \cong \triangle STR$

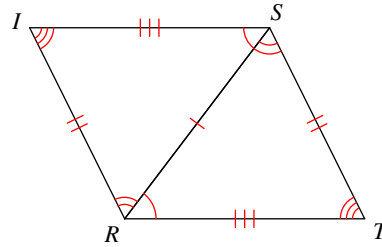
$\triangle BCD \cong \triangle GHI$



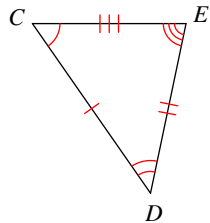
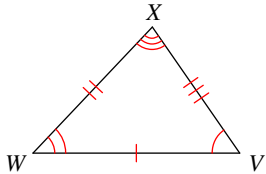
9) $\triangle PQR \cong \triangle QPD$



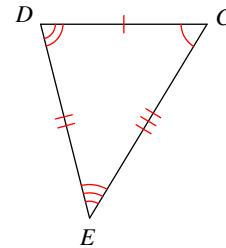
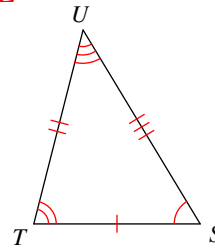
10) $\triangle RST \cong \triangle SRI$



11) $\triangle VWX \cong \triangle CDE$

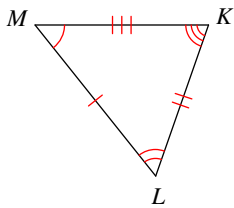
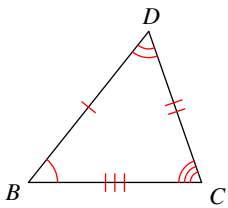


$\triangle STU \cong \triangle CDE$

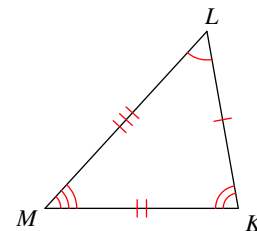
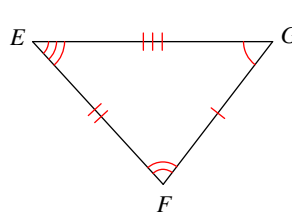


Mark the angles and sides of each pair of triangles to indicate that they are congruent.

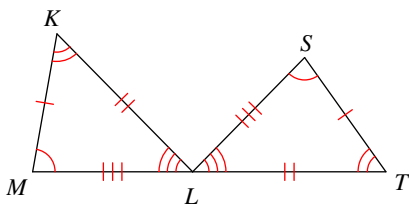
13) $\triangle BDC \cong \triangle MLK$



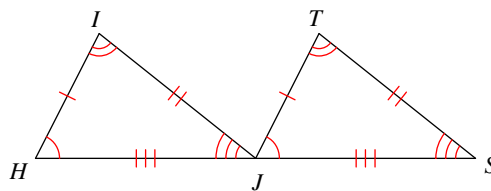
14) $\triangle GFE \cong \triangle LKM$



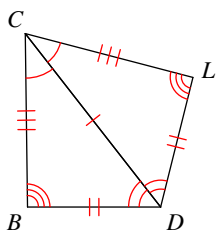
15) $\triangle MKL \cong \triangle STL$



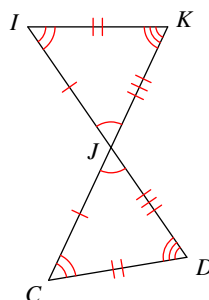
16) $\triangle HIJ \cong \triangle JTS$



17) $\triangle CDB \cong \triangle CDL$



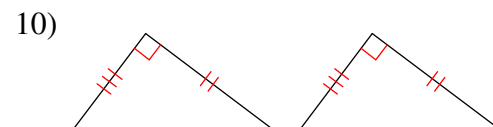
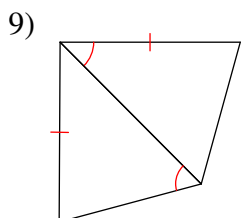
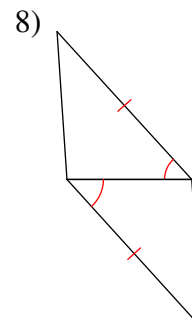
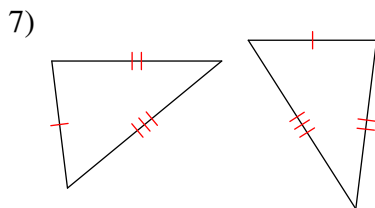
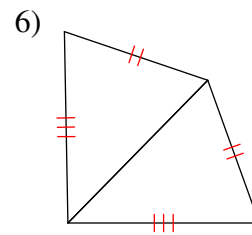
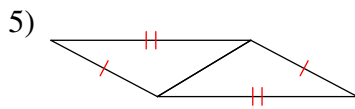
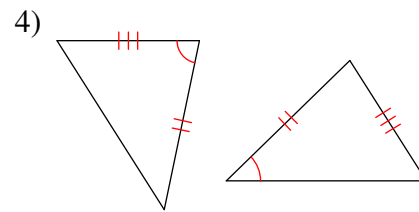
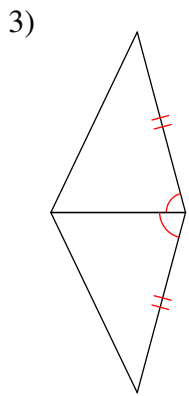
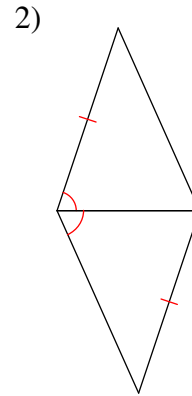
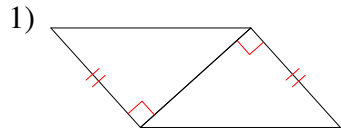
18) $\triangle JIK \cong \triangle JCD$



SSS and SAS Congruence

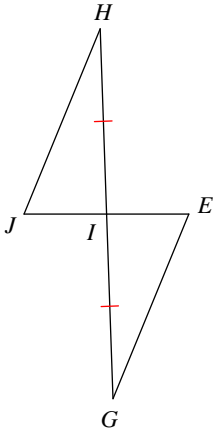
Date _____ Period _____

State if the two triangles are congruent. If they are, state how you know.

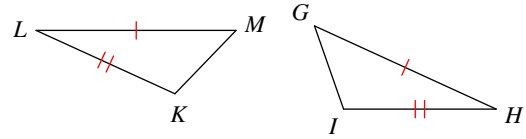


State what additional information is required in order to know that the triangles are congruent for the reason given.

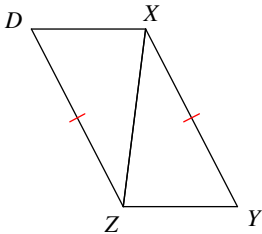
11) SAS



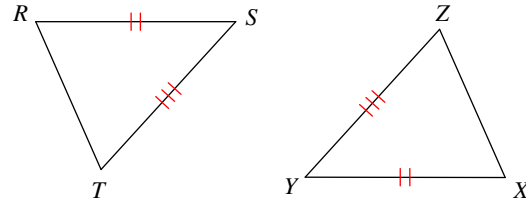
12) SAS



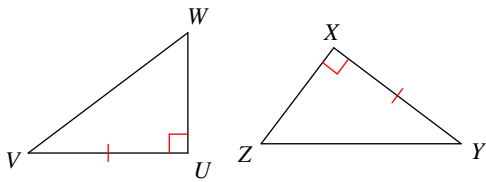
13) SSS



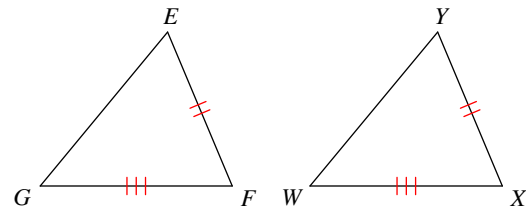
14) SSS



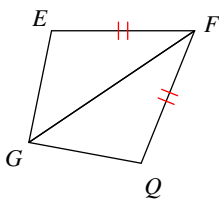
15) SAS



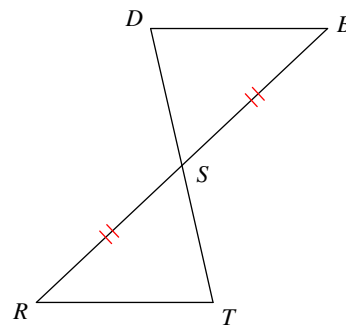
16) SSS



17) SAS



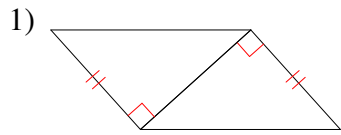
18) SAS



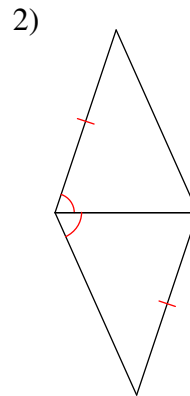
SSS and SAS Congruence

Date _____ Period _____

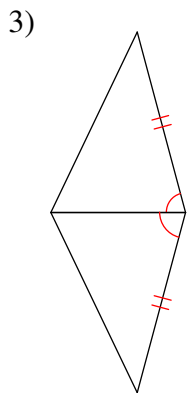
State if the two triangles are congruent. If they are, state how you know.



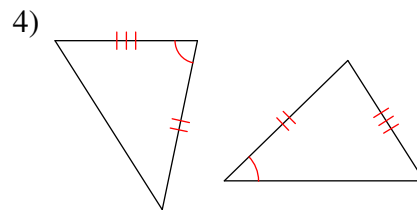
SAS



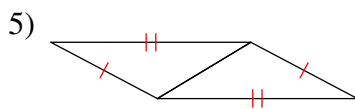
Not congruent



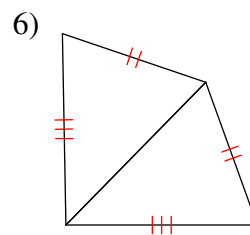
SAS



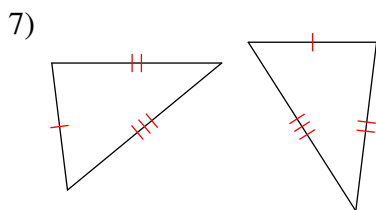
Not congruent



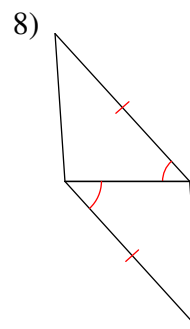
SSS



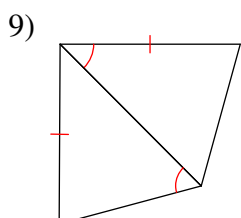
SSS



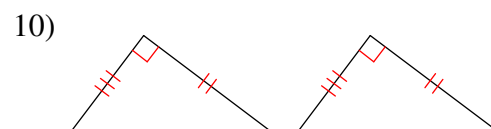
SSS



SAS



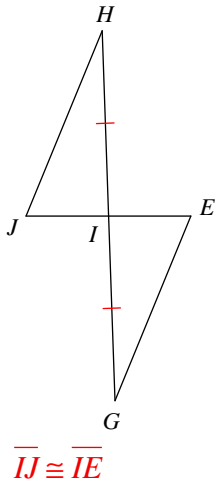
Not congruent



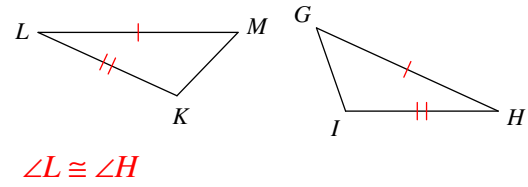
SAS

State what additional information is required in order to know that the triangles are congruent for the reason given.

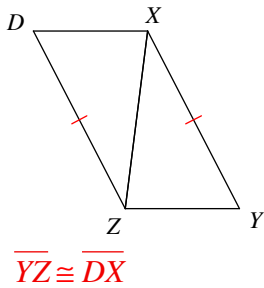
11) SAS



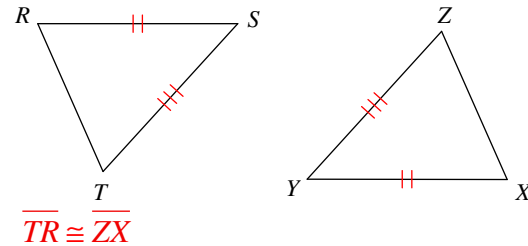
12) SAS



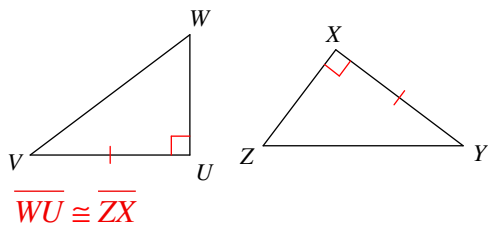
13) SSS



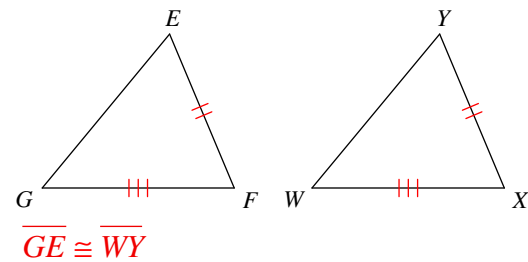
14) SSS



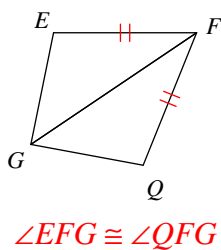
15) SAS



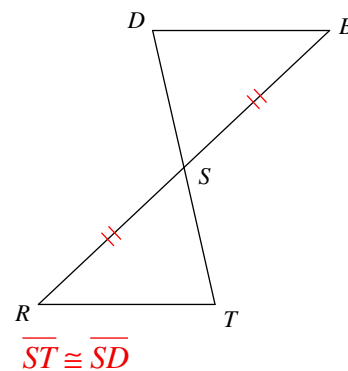
16) SSS



17) SAS



18) SAS

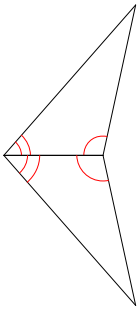


ASA and AAS Congruence

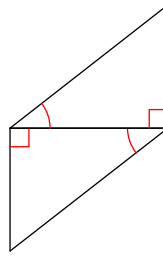
Date _____ Period _____

State if the two triangles are congruent. If they are, state how you know.

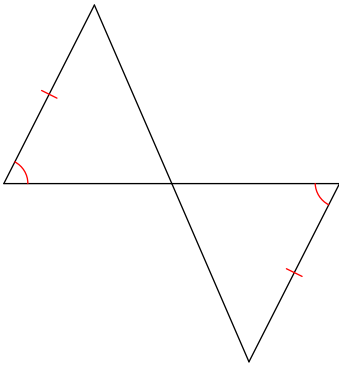
1)



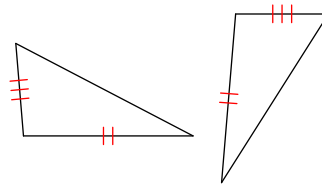
2)



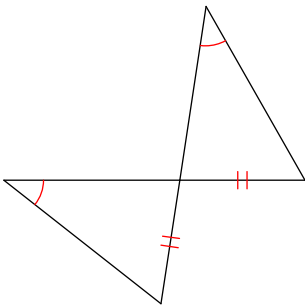
3)



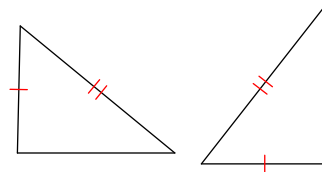
4)



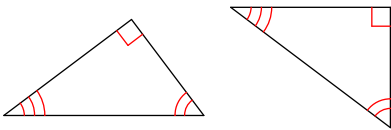
5)



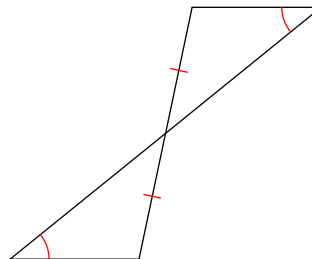
6)



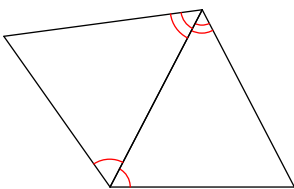
7)



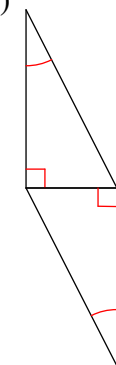
8)



9)

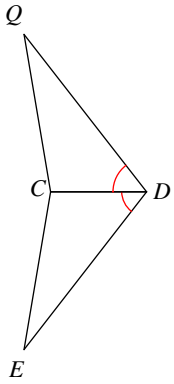


10)

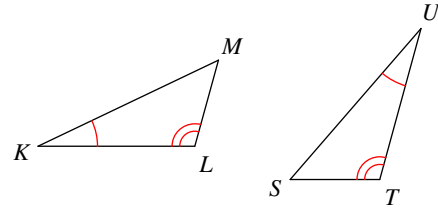


State what additional information is required in order to know that the triangles are congruent for the reason given.

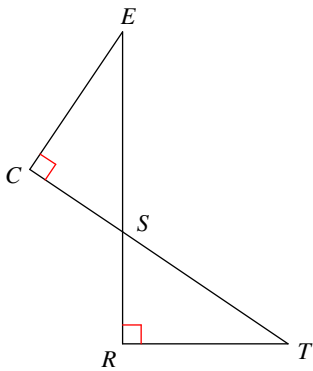
11) ASA



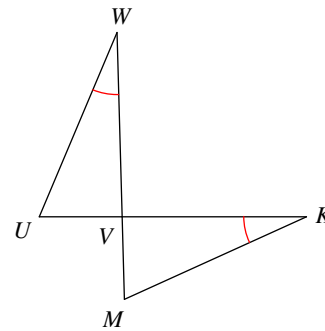
12) ASA



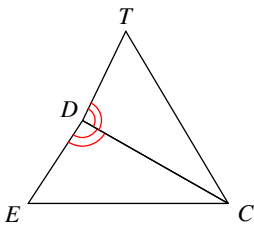
13) ASA



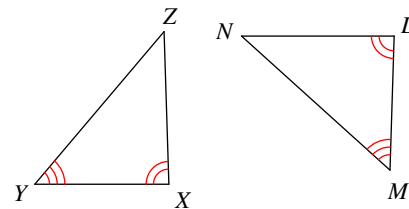
14) ASA



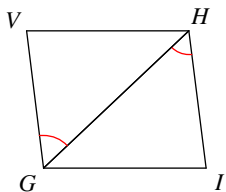
15) AAS



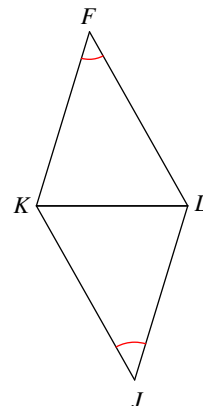
16) AAS



17) ASA



18) AAS

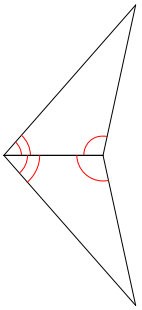


ASA and AAS Congruence

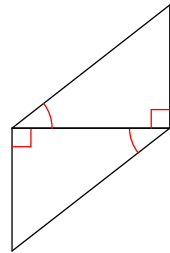
Date _____ Period _____

State if the two triangles are congruent. If they are, state how you know.

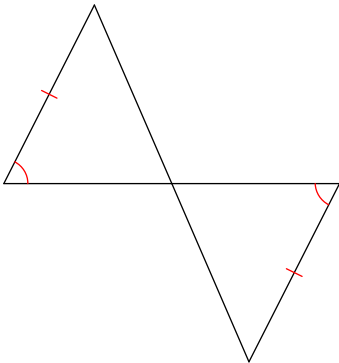
1) ASA



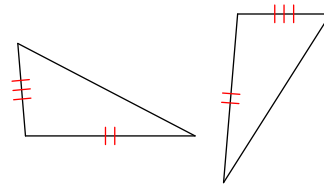
2) ASA



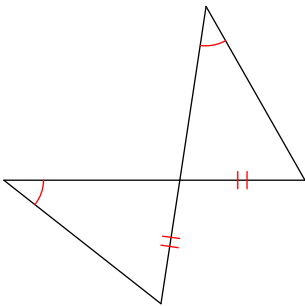
3) AAS



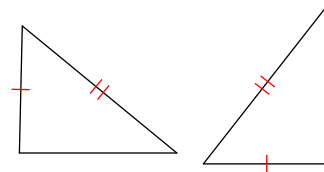
4) Not congruent



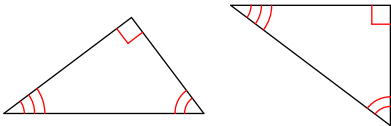
5) AAS



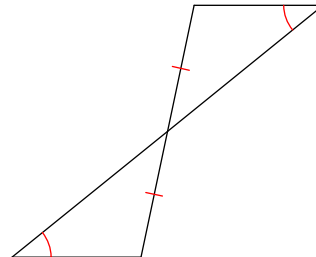
6) Not congruent



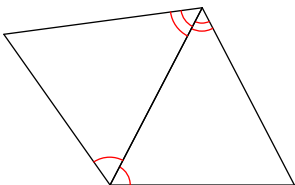
7) Not congruent



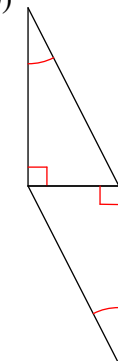
8) AAS



9) ASA

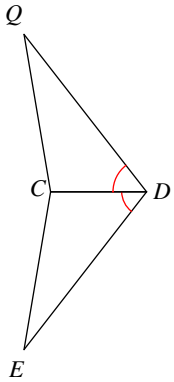


10) ASA

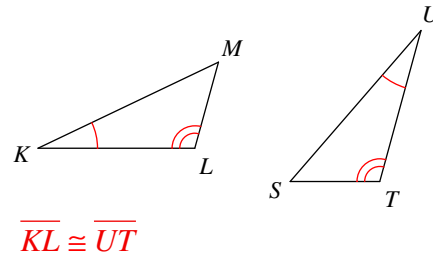


State what additional information is required in order to know that the triangles are congruent for the reason given.

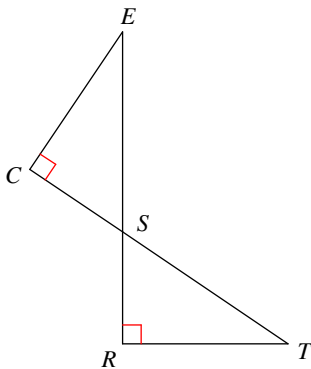
11) ASA $\angle ECD \cong \angle QCD$



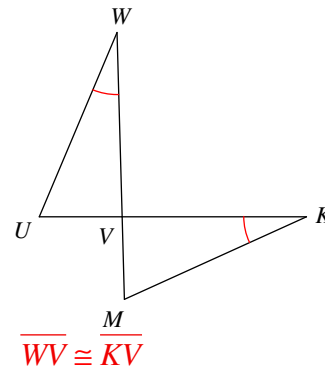
12) ASA



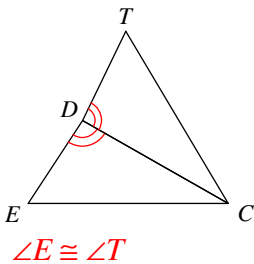
13) ASA $\overline{RS} \cong \overline{CS}$ or $\overline{TR} \cong \overline{EC}$



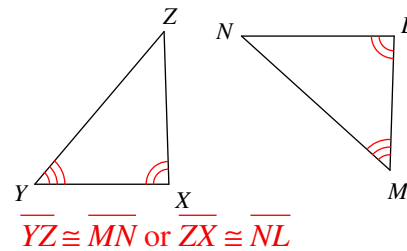
14) ASA



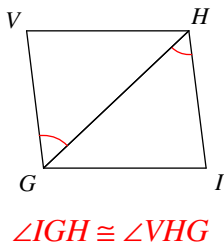
15) AAS



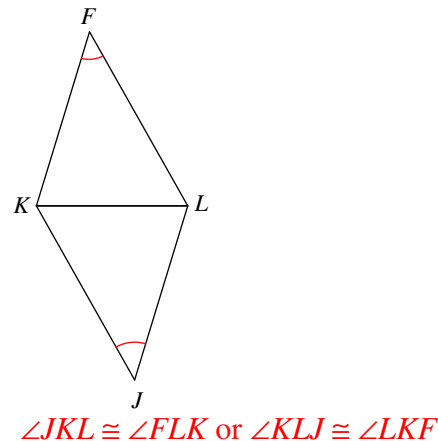
16) AAS



17) ASA



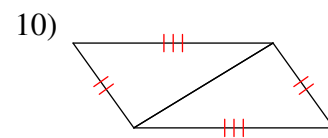
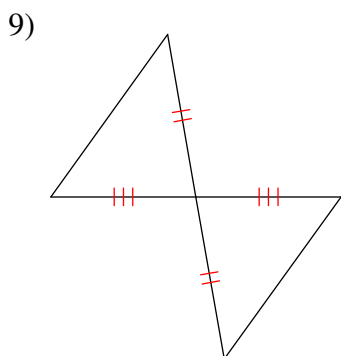
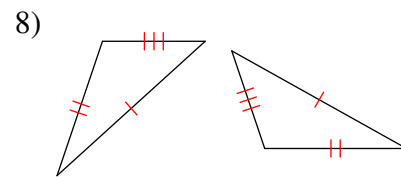
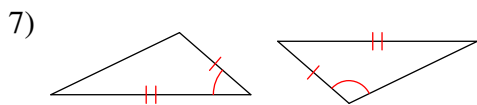
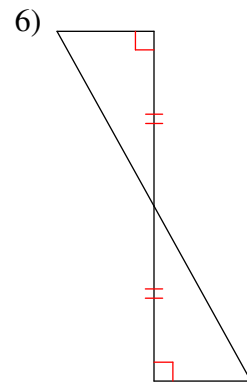
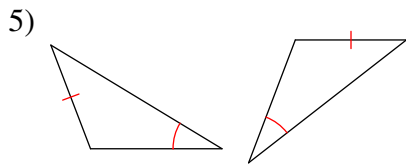
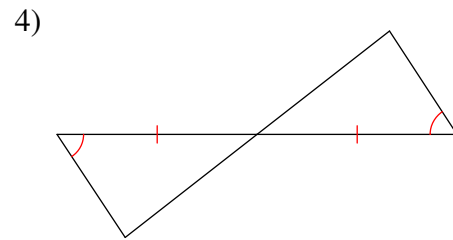
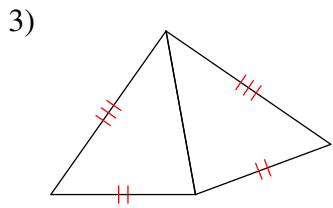
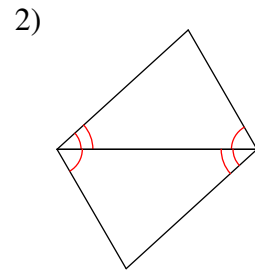
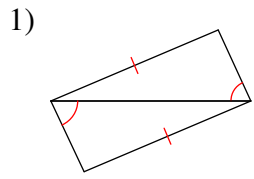
18) AAS



SSS, SAS, ASA, and AAS Congruence

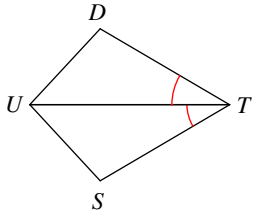
Date _____ Period _____

State if the two triangles are congruent. If they are, state how you know.

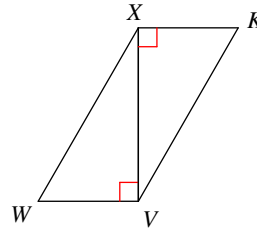


State what additional information is required in order to know that the triangles are congruent for the reason given.

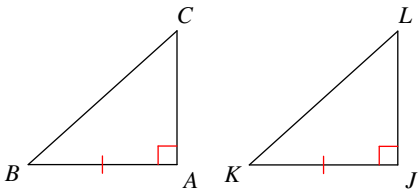
11) ASA



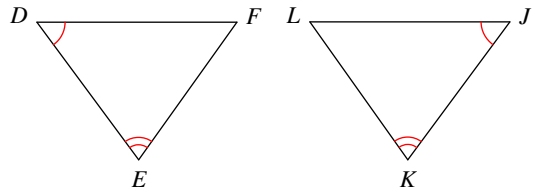
12) SAS



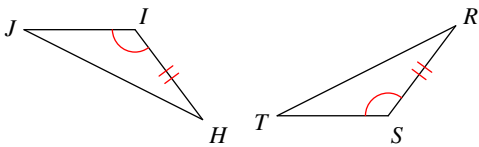
13) SAS



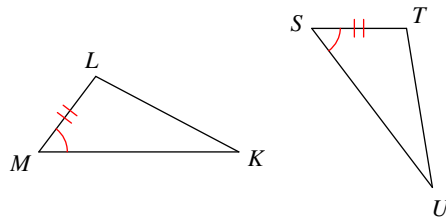
14) ASA



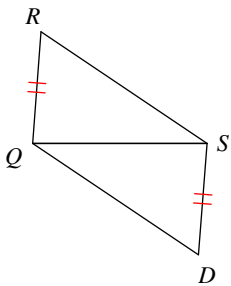
15) SAS



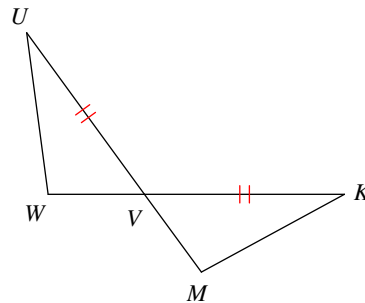
16) ASA



17) SSS



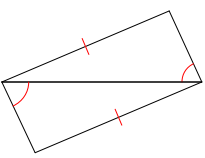
18) SAS

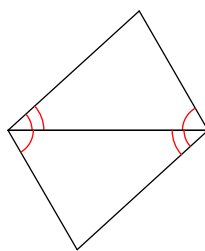


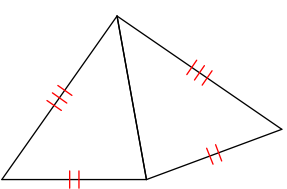
SSS, SAS, ASA, and AAS Congruence

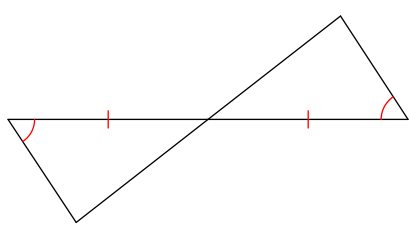
Date _____ Period _____

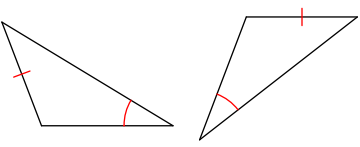
State if the two triangles are congruent. If they are, state how you know.

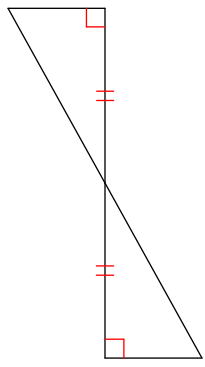
1) 
Not congruent

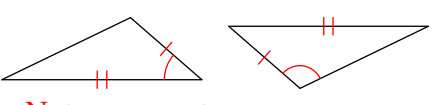
2) 
ASA

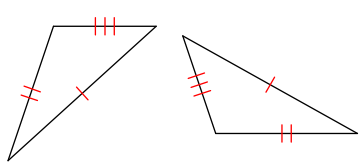
3) 
SSS

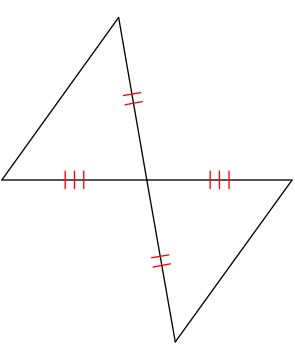
4) 
ASA

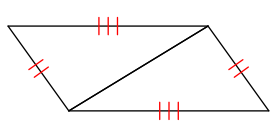
5) 
Not congruent

6) 
ASA

7) 
Not congruent

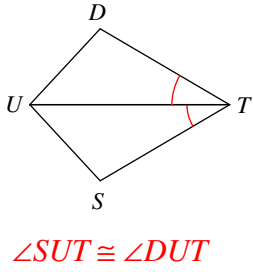
8) 
SSS

9) 
SAS

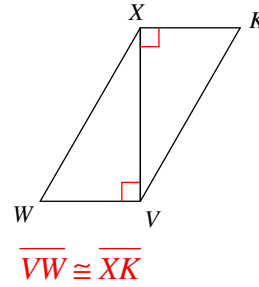
10) 
SSS

State what additional information is required in order to know that the triangles are congruent for the reason given.

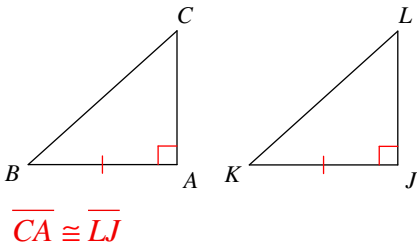
11) ASA



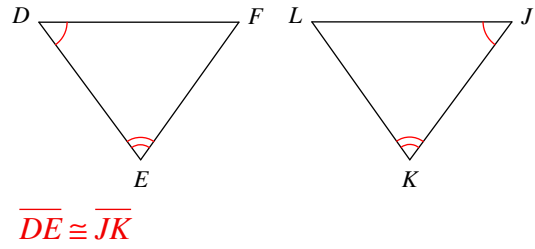
12) SAS



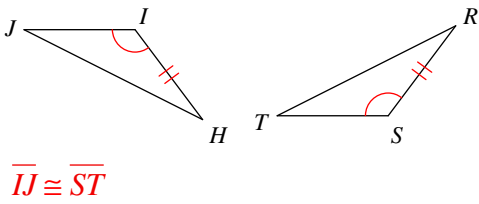
13) SAS



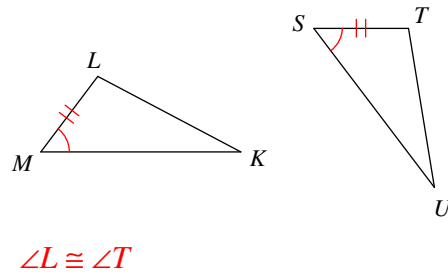
14) ASA



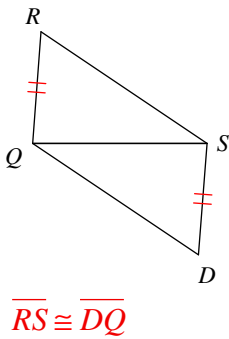
15) SAS



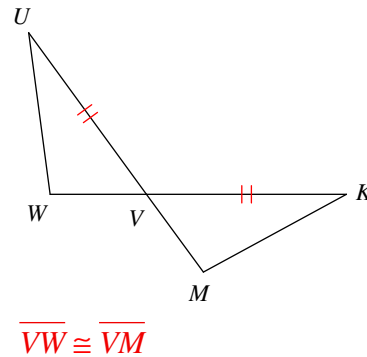
16) ASA



17) SSS



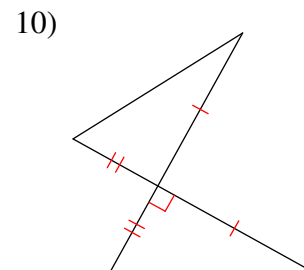
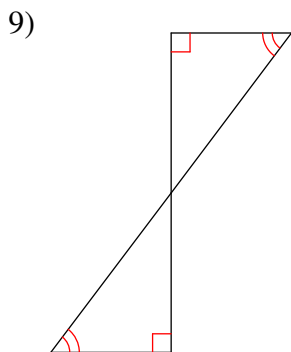
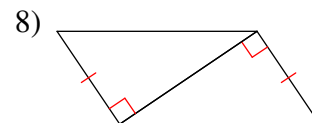
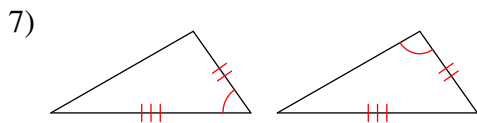
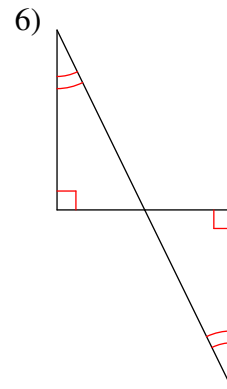
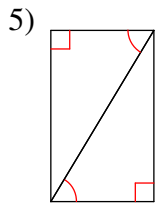
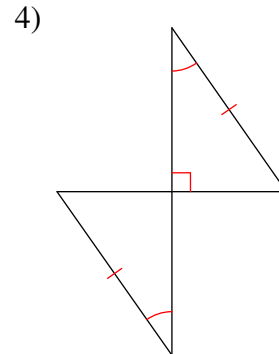
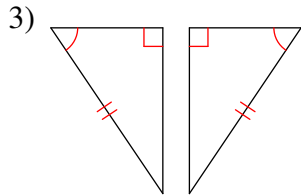
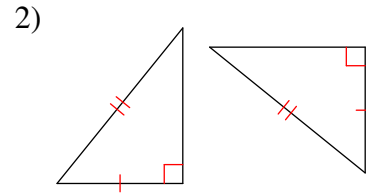
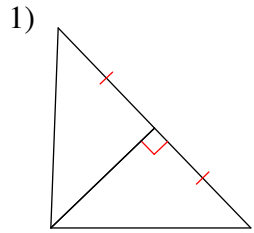
18) SAS



Right Triangle Congruence

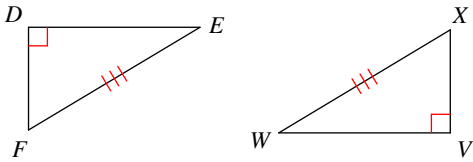
Date _____ Period _____

State if the two triangles are congruent. If they are, state how you know.

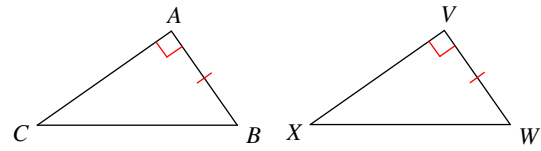


State what additional information is required in order to know that the triangles are congruent for the reason given.

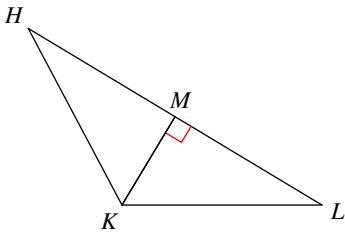
11) HL



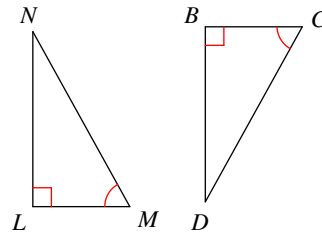
12) LL



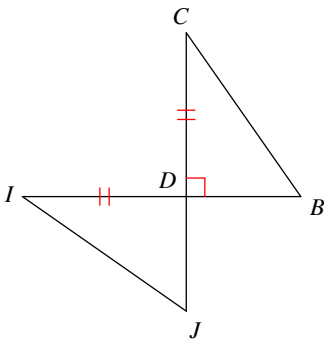
13) LL



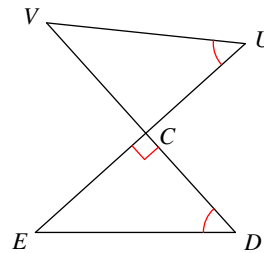
14) HA



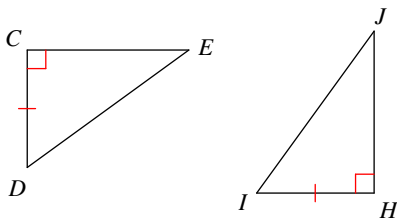
15) LA



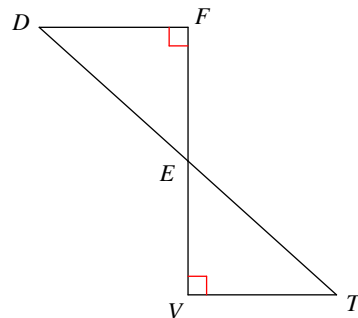
16) HA



17) HL



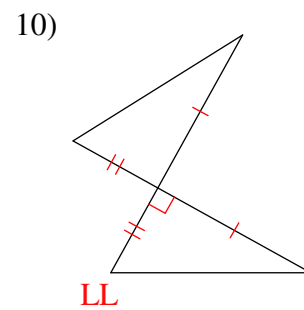
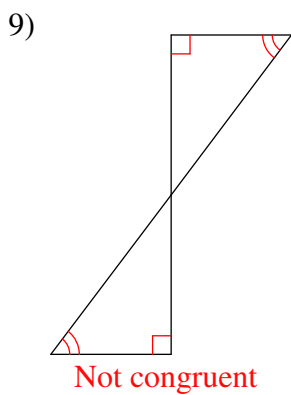
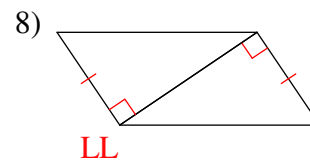
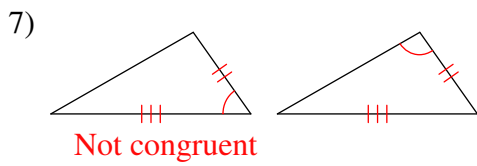
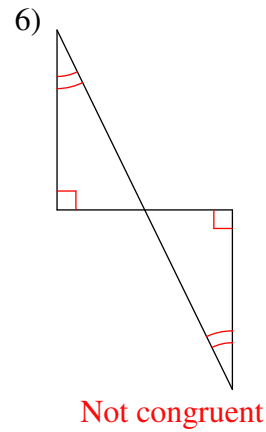
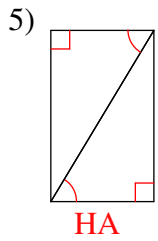
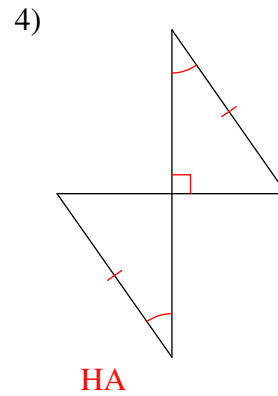
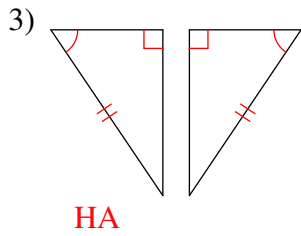
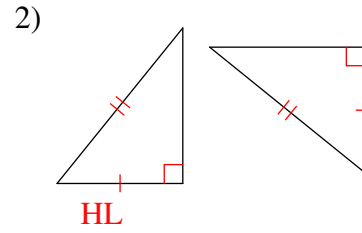
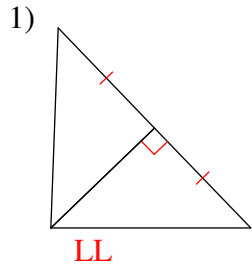
18) LA



Right Triangle Congruence

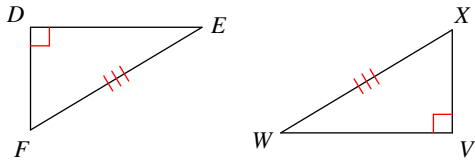
Date _____ Period _____

State if the two triangles are congruent. If they are, state how you know.



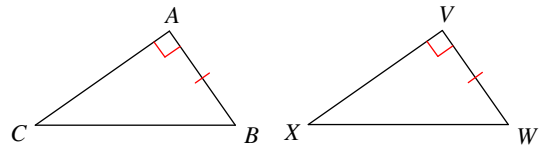
State what additional information is required in order to know that the triangles are congruent for the reason given.

11) HL



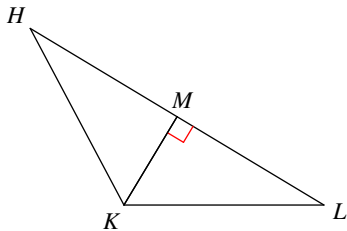
$$\overline{DE} \cong \overline{VW} \text{ or } \overline{FD} \cong \overline{XV}$$

12) LL



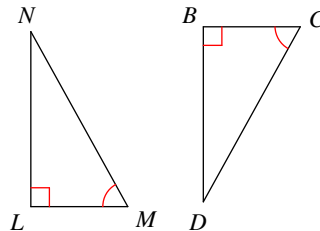
$$\overline{CA} \cong \overline{XV}$$

13) LL



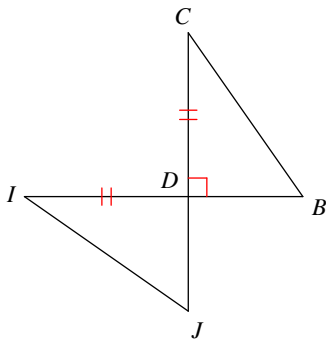
$$\overline{ML} \cong \overline{MH}$$

14) HA



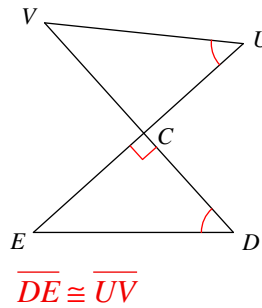
$$\overline{MN} \cong \overline{CD}$$

15) LA



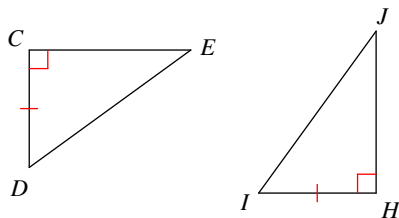
$$\angle C \cong \angle I \text{ or } \angle B \cong \angle J$$

16) HA



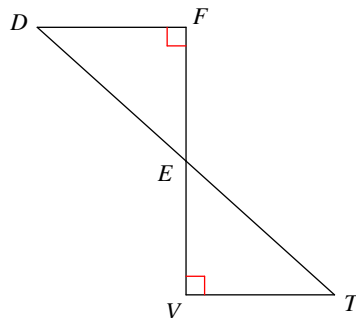
$$\overline{DE} \cong \overline{UV}$$

17) HL



$$\overline{DE} \cong \overline{IJ}$$

18) LA

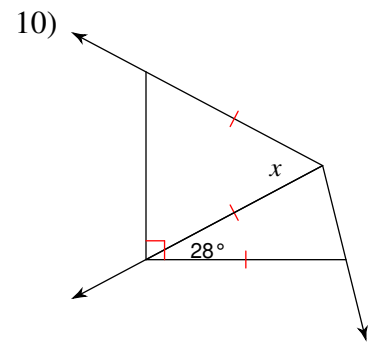
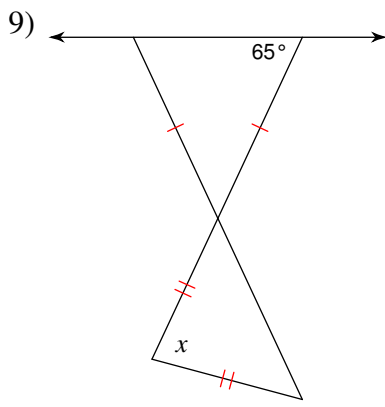
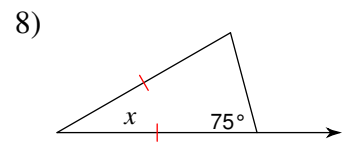
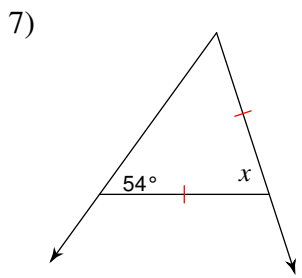
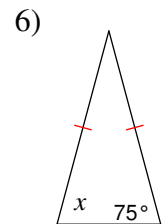
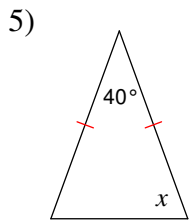
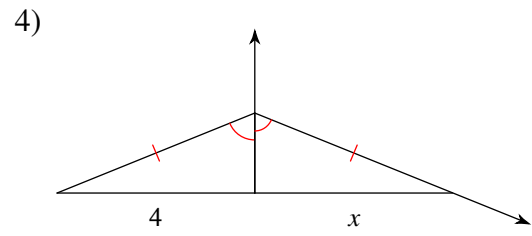
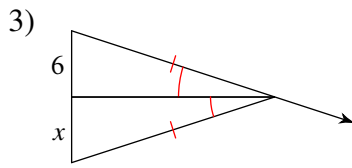
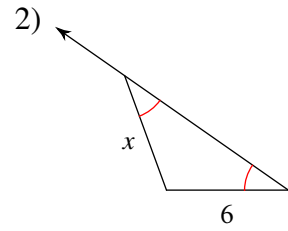
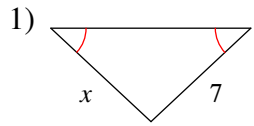


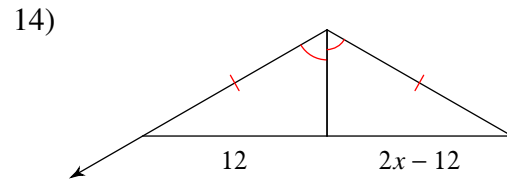
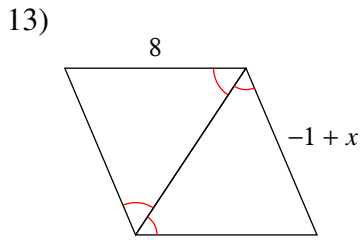
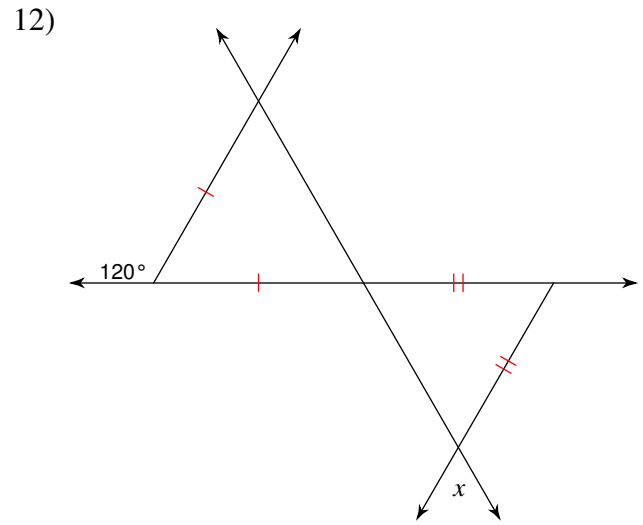
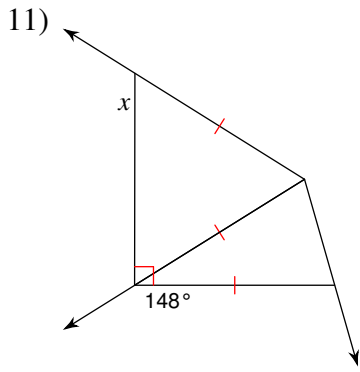
$$\overline{FE} \cong \overline{VE} \text{ or } \overline{DF} \cong \overline{TV}$$

Isosceles and Equilateral Triangles

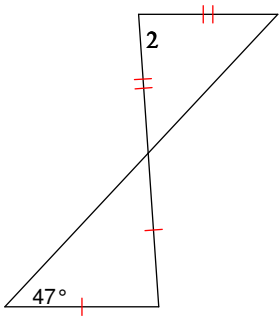
Date _____ Period _____

Find the value of x .

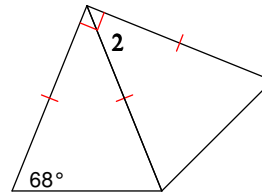




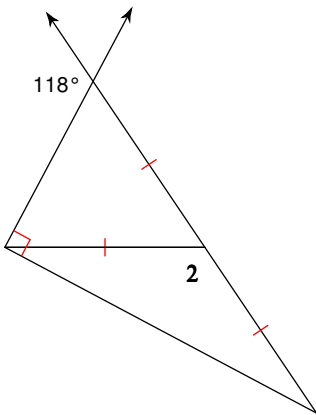
15) $m\angle 2 = x + 94$



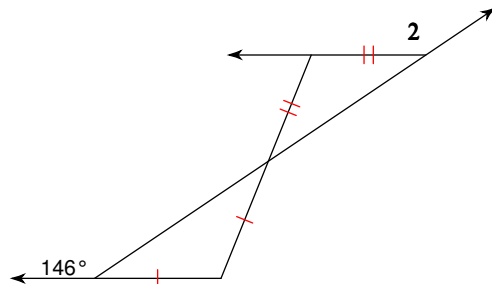
16) $m\angle 2 = 4x - 2$



17) $m\angle 2 = 12x + 4$



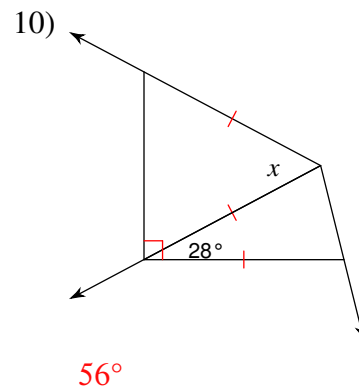
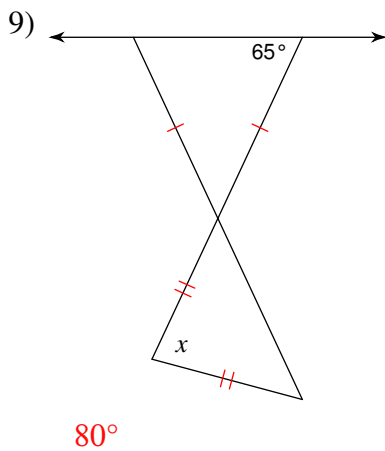
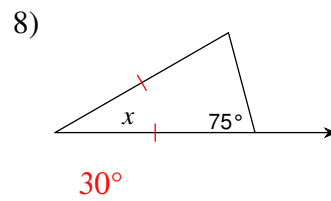
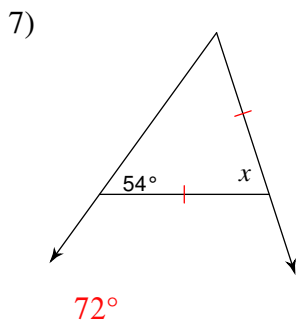
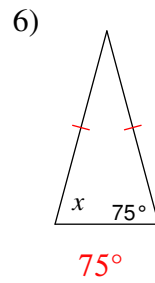
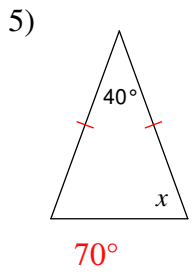
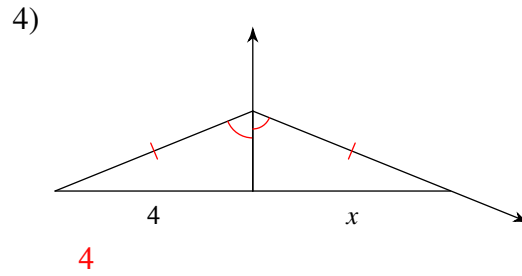
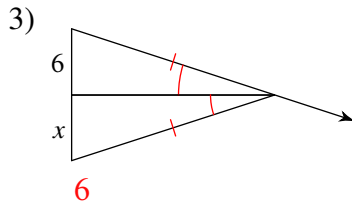
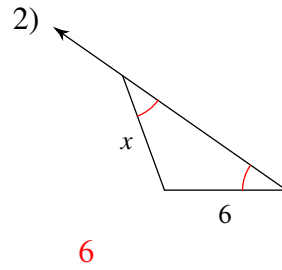
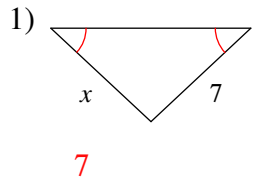
18) $m\angle 2 = 13x + 3$

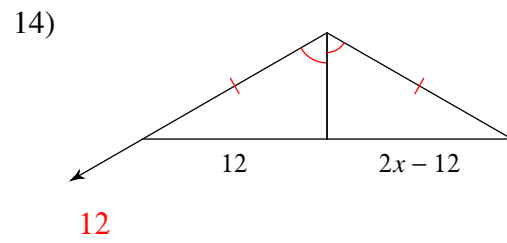
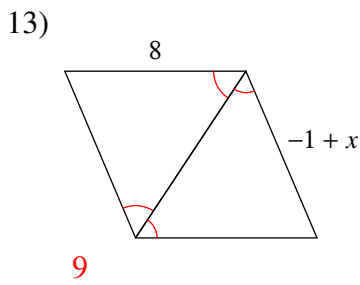
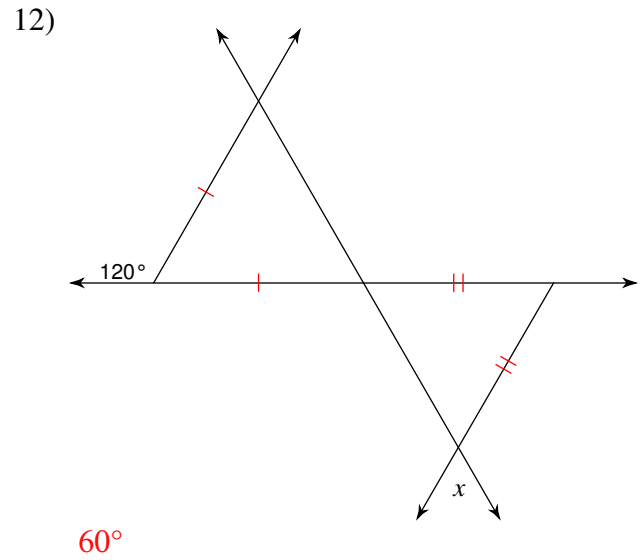
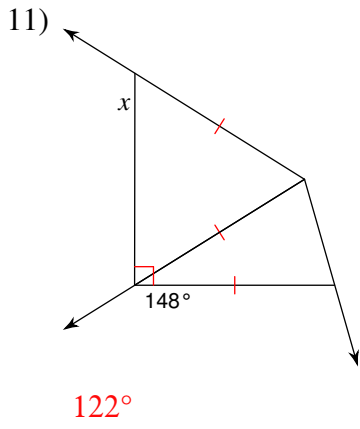


Isosceles and Equilateral Triangles

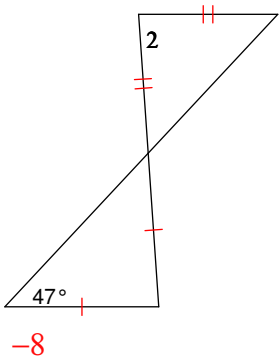
Date _____ Period _____

Find the value of x .

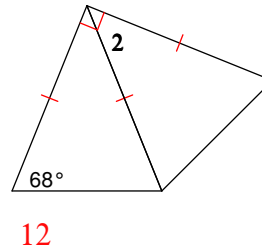




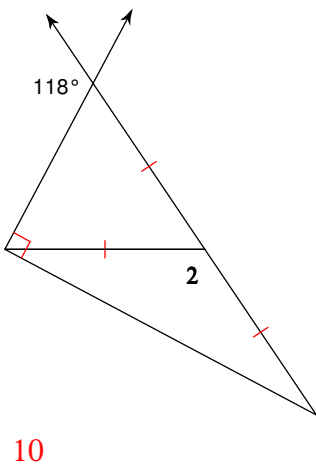
15) $m\angle 2 = x + 94$



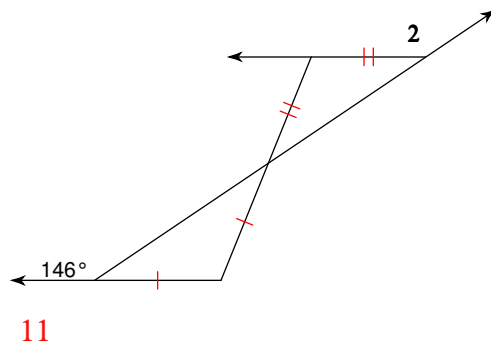
16) $m\angle 2 = 4x - 2$



17) $m\angle 2 = 12x + 4$



18) $m\angle 2 = 13x + 3$

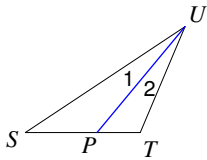


Angle Bisectors of Triangles

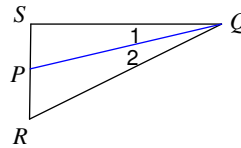
Date _____ Period _____

Each figure shows a triangle with one of its angle bisectors.

1) $m\angle SUT = 34^\circ$. Find $m\angle 1$.

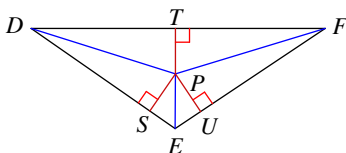


2) Find $m\angle SQR$ if $m\angle 2 = 13^\circ$.

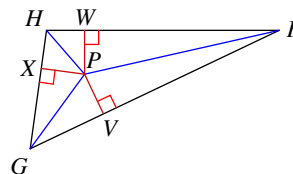


Each figure shows a triangle with its three angle bisectors intersecting at point P.

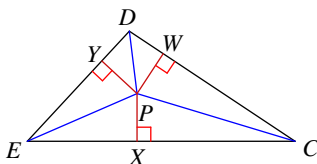
3) $PT = 3$. Find PU .



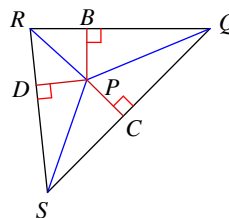
4) Find PV if $PW = 7$.



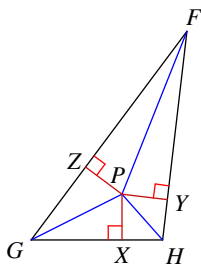
5) Find PW if $PX = 5$.



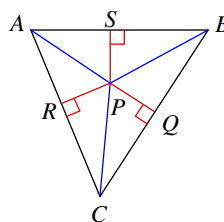
6) Find PD if $PC = 8$.



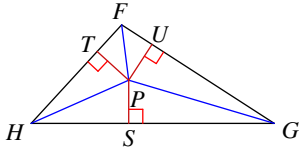
7) $PY = 2$ and $HP = 3$.
Find HY .



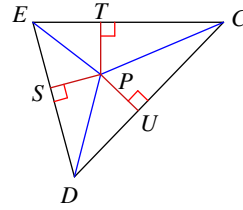
8) Find AP if $PQ = 1$
and $AR = 2$.



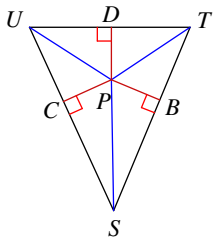
- 9) $PT = 5$ and $FP = 7$.
Find FT .



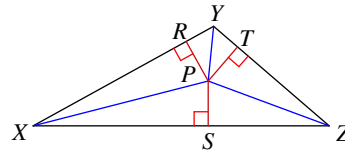
- 10) $PT = 3$ and $CP = 8$.
Find CT .



- 11) Find PB if $UC = 2$
and $UP = 3$.

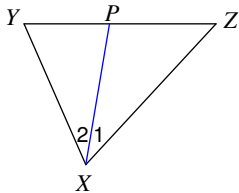


- 12) $PS = 3$ and $XP = 5$.
Find XS .

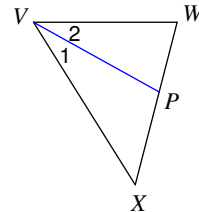


Each figure shows a triangle with one of its angle bisectors.

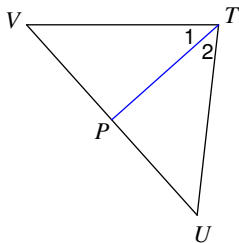
- 13) Find x if $m\angle 2 = 4x + 5$ and
 $m\angle 1 = 5x - 2$.



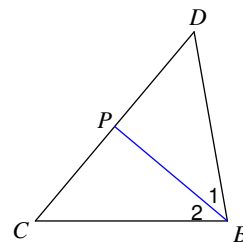
- 14) Find x if $m\angle 2 = 1 + 28x$ and
 $m\angle XVW = 59x - 1$.



- 15) $m\angle 1 = 7x + 7$ and $m\angle VTU = 16x + 4$.
Find $m\angle 1$.



- 16) Find $m\angle 2$ if $m\angle 2 = 7x + 5$ and
 $m\angle 1 = 9x - 5$.

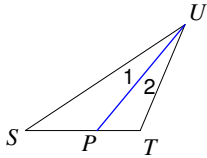


Angle Bisectors of Triangles

Date _____ Period _____

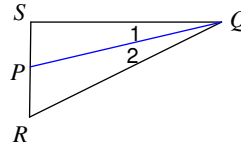
Each figure shows a triangle with one of its angle bisectors.

1) $m\angle SUT = 34^\circ$. Find $m\angle 1$.



17°

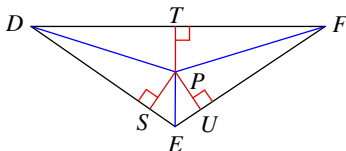
2) Find $m\angle SQR$ if $m\angle 2 = 13^\circ$.



26°

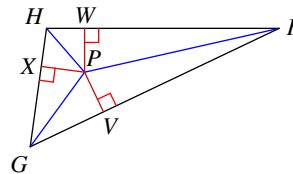
Each figure shows a triangle with its three angle bisectors intersecting at point P.

3) $PT = 3$. Find PU .



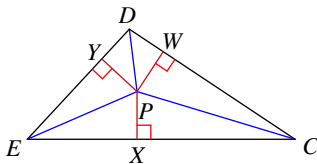
3

4) Find PV if $PW = 7$.



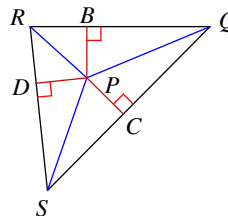
7

5) Find PW if $PX = 5$.



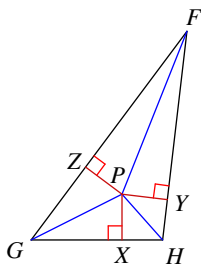
5

6) Find PD if $PC = 8$.



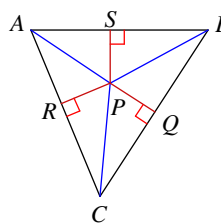
8

7) $PY = 2$ and $HP = 3$.
Find HY .



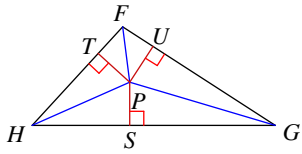
2.24

8) Find AP if $PQ = 1$
and $AR = 2$.



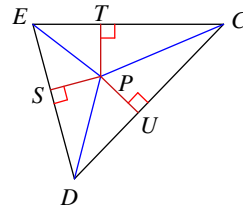
2.24

- 9) $PT = 5$ and $FP = 7$.
Find FT .



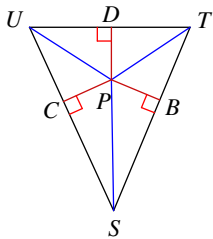
4.9

- 10) $PT = 3$ and $CP = 8$.
Find CT .



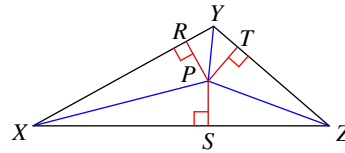
7.42

- 11) Find PB if $UC = 2$
and $UP = 3$.



2.24

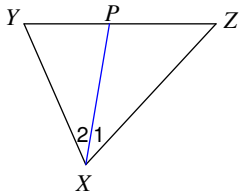
- 12) $PS = 3$ and $XP = 5$.
Find XS .



4

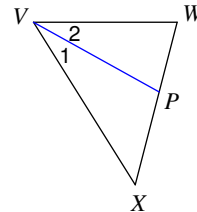
Each figure shows a triangle with one of its angle bisectors.

- 13) Find x if $m\angle 2 = 4x + 5$ and
 $m\angle 1 = 5x - 2$.



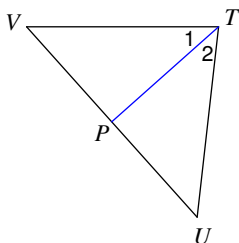
7

- 14) Find x if $m\angle 2 = 1 + 28x$ and
 $m\angle XVW = 59x - 1$.



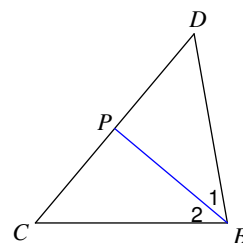
1

- 15) $m\angle 1 = 7x + 7$ and $m\angle VTU = 16x + 4$.
Find $m\angle 1$.



42°

- 16) Find $m\angle 2$ if $m\angle 2 = 7x + 5$ and
 $m\angle 1 = 9x - 5$.



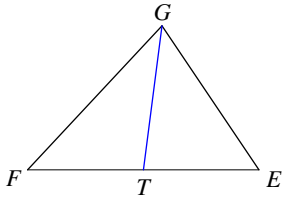
40°

Medians

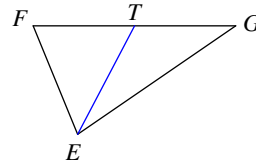
Date _____ Period _____

Each figure shows a triangle with one or more of its medians.

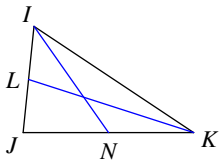
1) Find FE if $TE = 8$



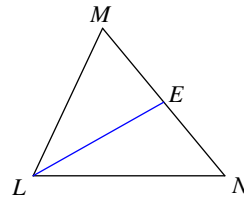
2) Find GF if $TF = 6.3$



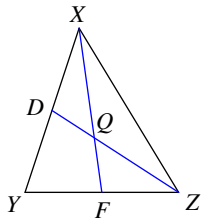
3) Find LJ if $IJ = 6$



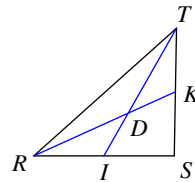
4) Find NM if $EM = 10$



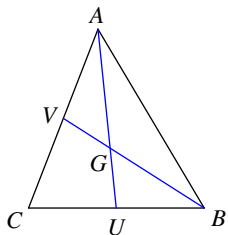
5) Find ZQ if $ZD = 6$



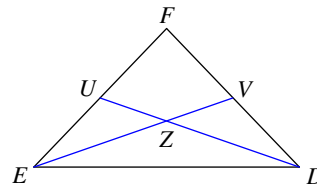
6) Find RK if $DK = 3.4$



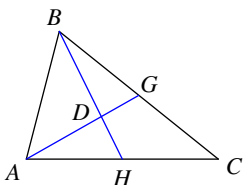
7) Find BG if $BV = 3.9$



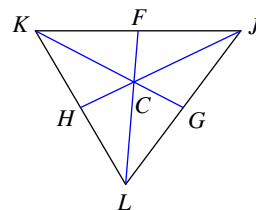
8) Find EZ if $ZV = 12$



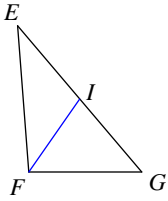
9) Find DH if $BH = 4.5$



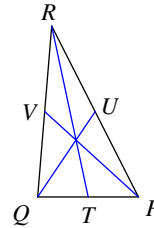
10) Find CG if $KG = 41.4$



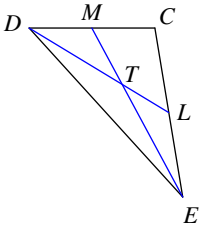
11) Find x if $GE = 3x + 5$ and $IE = x + 6$



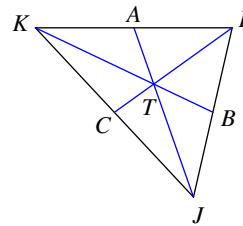
12) Find x if $TP = 2x + 1$ and $TQ = 3x - 5$



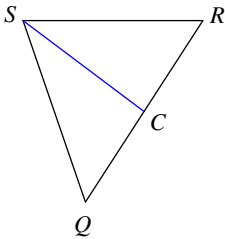
13) Find x if $ET = 3x + 2$ and $EM = 5x$



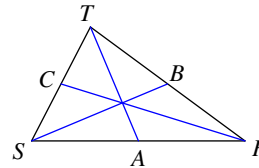
14) Find x if $KT = \frac{6x + 6}{5}$ and $KB = \frac{11}{5}x - \frac{6}{5}$



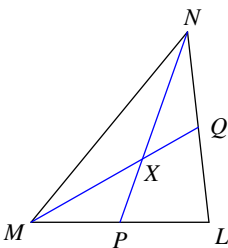
15) Find CQ if $CR = x$ and $CQ = 2x - 6$



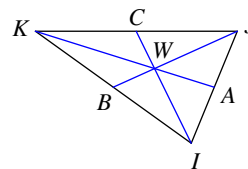
16) Find AS if $AR = x - \frac{1}{2}$ and $AS = \frac{x + 5}{2}$



17) Find XQ if $MQ = 3x - 3$ and $XQ = 2x - 6$



18) Find JW if $JW = 6x + 2$ and $JB = 10x + 1$

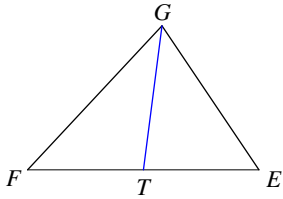


Medians

Date _____ Period _____

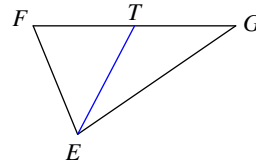
Each figure shows a triangle with one or more of its medians.

- 1) Find FE if $TE = 8$



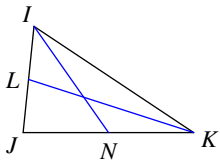
16

- 2) Find GF if $TF = 6.3$



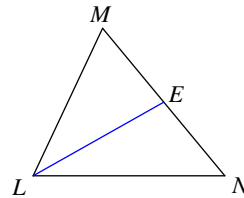
12.6

- 3) Find LJ if $IJ = 6$



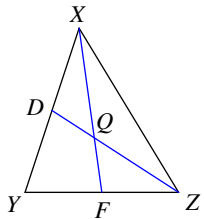
3

- 4) Find NM if $EM = 10$



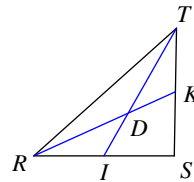
20

- 5) Find ZQ if $ZD = 6$



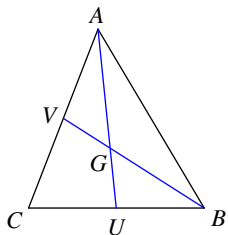
4

- 6) Find RK if $DK = 3.4$



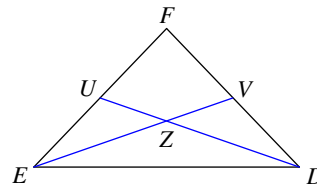
10.2

- 7) Find BG if $BV = 3.9$



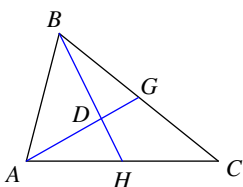
2.6

- 8) Find EZ if $ZV = 12$



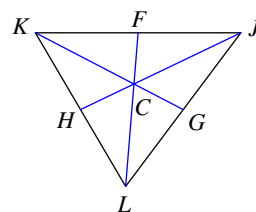
24

- 9) Find DH if $BH = 4.5$



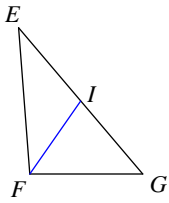
1.5

- 10) Find CG if $KG = 41.4$



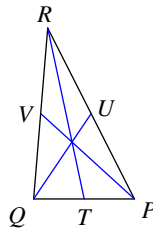
13.8

11) Find x if $GE = 3x + 5$ and $IE = x + 6$



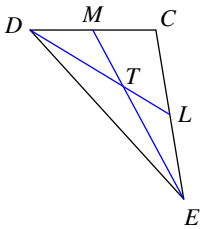
7

12) Find x if $TP = 2x + 1$ and $TQ = 3x - 5$



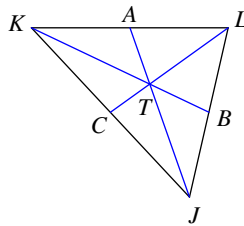
6

13) Find x if $ET = 3x + 2$ and $EM = 5x$



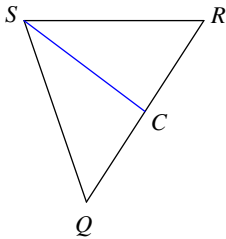
6

14) Find x if $KT = \frac{6x + 6}{5}$ and $KB = \frac{11}{5}x - \frac{6}{5}$



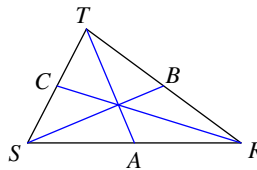
7.5

15) Find CQ if $CR = x$ and $CQ = 2x - 6$



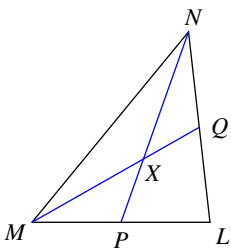
6

16) Find AS if $AR = x - \frac{1}{2}$ and $AS = \frac{x + 5}{2}$



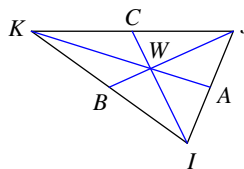
5.5

17) Find XQ if $MQ = 3x - 3$ and $XQ = 2x - 6$



4

18) Find JW if $JW = 6x + 2$ and $JB = 10x + 1$



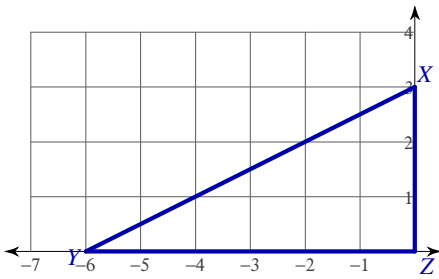
14

Coordinate Geometry and the Centroid

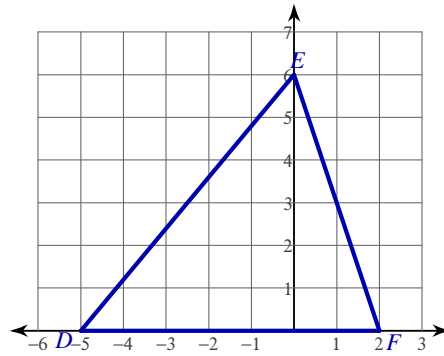
Date _____ Period _____

Find coordinates of the centroid of each triangle.

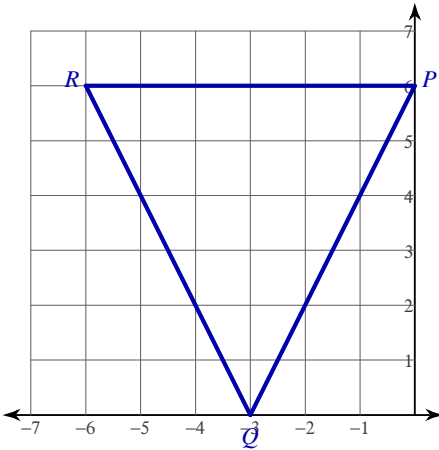
1)



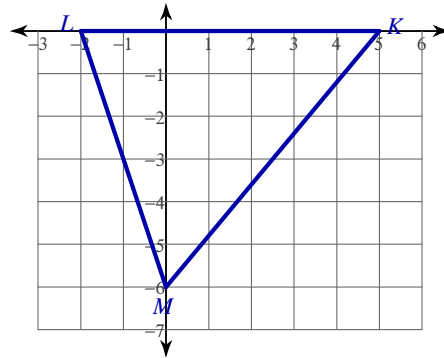
2)



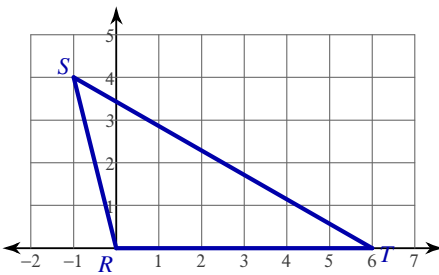
3)



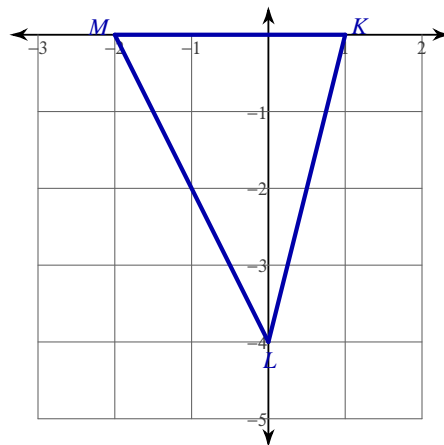
4)



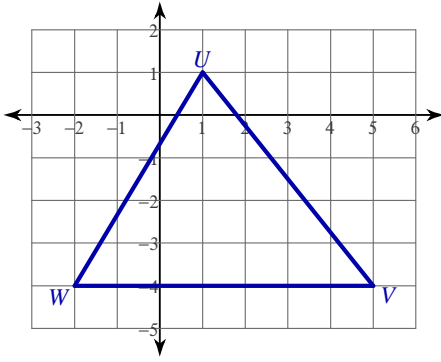
5)



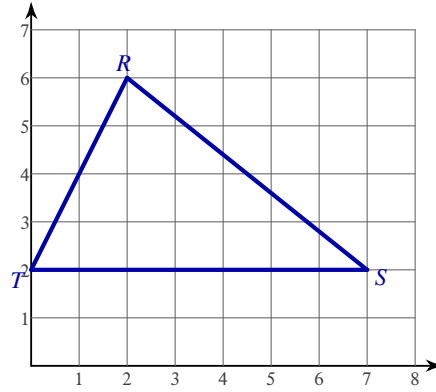
6)



7)



8)



Find the coordinates of the centroid of each triangle given the three vertices.

9) $C(-7, -6)$, $B(-8, 0)$, $A(0, 0)$

10) $S(0, -6)$, $R(-10, -6)$, $Q(1, 0)$

11) $T(0, 0)$, $U(1, 3)$, $V(-2, 0)$

12) $Y(3, 4)$, $X(-5, 0)$, $W(0, 0)$

13) $E(6, -3)$, $D(-5, -3)$, $C(6, -1)$

14) $F(-7, -3)$, $G(-7, -5)$, $H(-3, -3)$

Critical thinking questions:

15) Two vertices of a triangle are $(0, 0)$ and $(9, 0)$. The centroid is $(6, 1)$. Find the third vertex of the triangle.

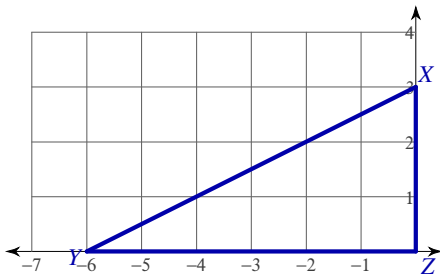
16) For question #1, connect the midpoints of each side of the triangle to form a smaller triangle within the original triangle. Find the coordinates of the centroid of the smaller triangle. What happened and why?

Coordinate Geometry and the Centroid

Date _____ Period _____

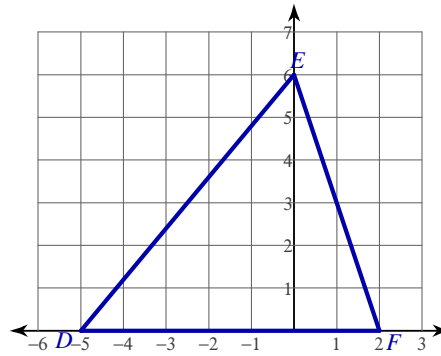
Find coordinates of the centroid of each triangle.

1)



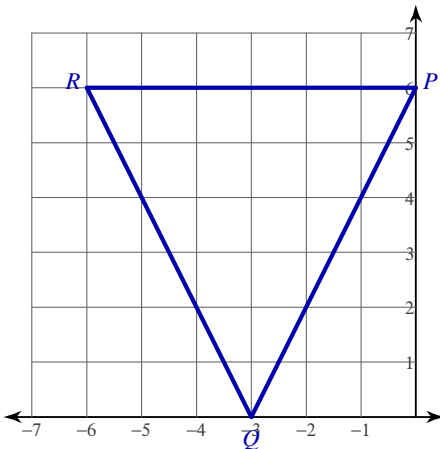
$(-2, 1)$

2)



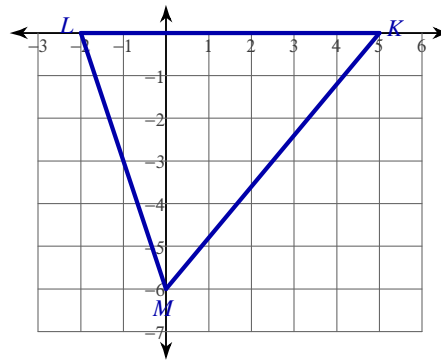
$(-1, 2)$

3)



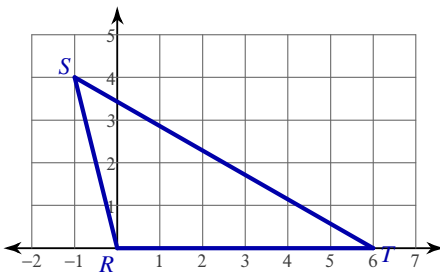
$(-3, 4)$

4)



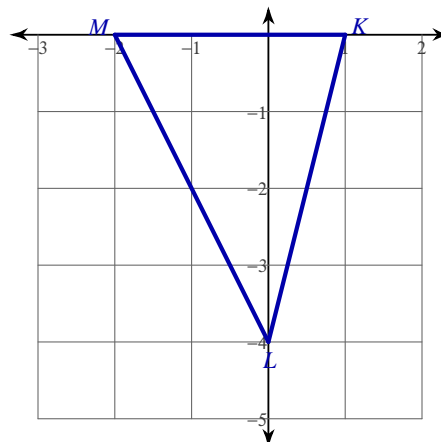
$(1, -2)$

5)



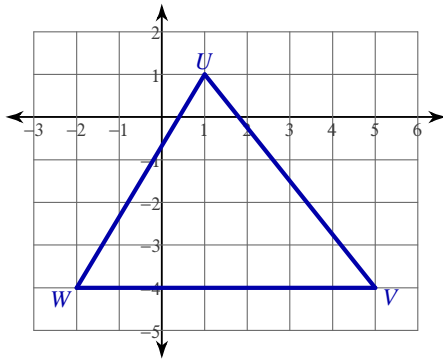
$(\frac{5}{3}, \frac{4}{3})$

6)



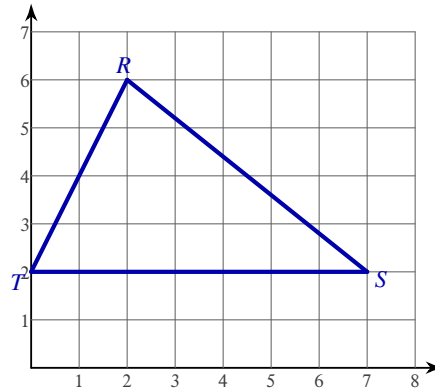
$(-\frac{1}{3}, -\frac{4}{3})$

7)



$$\left(\frac{4}{3}, -\frac{7}{3}\right)$$

8)



$$\left(3, \frac{10}{3}\right)$$

Find the coordinates of the centroid of each triangle given the three vertices.

9) $C(-7, -6), B(-8, 0), A(0, 0)$

$$(-5, -2)$$

10) $S(0, -6), R(-10, -6), Q(1, 0)$

$$(-3, -4)$$

11) $T(0, 0), U(1, 3), V(-2, 0)$

$$\left(-\frac{1}{3}, 1\right)$$

12) $Y(3, 4), X(-5, 0), W(0, 0)$

$$\left(-\frac{2}{3}, \frac{4}{3}\right)$$

13) $E(6, -3), D(-5, -3), C(6, -1)$

$$\left(\frac{7}{3}, -\frac{7}{3}\right)$$

14) $F(-7, -3), G(-7, -5), H(-3, -3)$

$$\left(-\frac{17}{3}, -\frac{11}{3}\right)$$

Critical thinking questions:

15) Two vertices of a triangle are $(0, 0)$ and $(9, 0)$. The centroid is $(6, 1)$. Find the third vertex of the triangle.

$$(9, 3)$$

16) For question #1, connect the midpoints of each side of the triangle to form a smaller triangle within the original triangle. Find the coordinates of the centroid of the smaller triangle. What happened and why?

Centroid stays the same. The medians don't change.

The Triangle Inequality Theorem

Date_____ Period_____

State if the three numbers can be the measures of the sides of a triangle.

1) 7, 5, 4

2) 3, 6, 2

3) 5, 2, 4

4) 8, 2, 8

5) 9, 6, 5

6) 5, 8, 4

7) 4, 7, 8

8) 11, 12, 9

9) 3, 10, 8

10) 1, 13, 13

11) 2, 15, 16

12) 10, 18, 10

Two sides of a triangle have the following measures. Find the range of possible measures for the third side.

13) 9, 5

14) 5, 8

15) 6, 10

16) 6, 9

17) 11, 8

18) 14, 11

The Triangle Inequality Theorem

Date _____ Period _____

State if the three numbers can be the measures of the sides of a triangle.

1) 7, 5, 4

Yes

2) 3, 6, 2

No

3) 5, 2, 4

Yes

4) 8, 2, 8

Yes

5) 9, 6, 5

Yes

6) 5, 8, 4

Yes

7) 4, 7, 8

Yes

8) 11, 12, 9

Yes

9) 3, 10, 8

Yes

10) 1, 13, 13

Yes

11) 2, 15, 16

Yes

12) 10, 18, 10

Yes

Two sides of a triangle have the following measures. Find the range of possible measures for the third side.

13) 9, 5

$4 < x < 14$

14) 5, 8

$3 < x < 13$

15) 6, 10

$4 < x < 16$

16) 6, 9

$3 < x < 15$

17) 11, 8

$3 < x < 19$

18) 14, 11

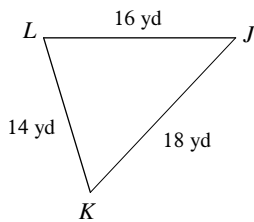
$3 < x < 25$

Inequalities in One Triangle

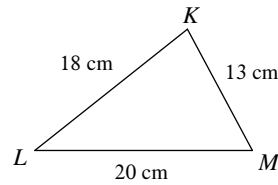
Date _____ Period _____

Order the angles in each triangle from smallest to largest.

1)



2)



3) In $\triangle RQP$

$$QP = 15 \text{ ft}$$

$$RP = 25 \text{ ft}$$

$$RQ = 13 \text{ ft}$$

4) In $\triangle TUV$

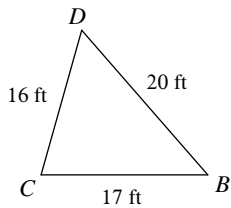
$$UV = 17 \text{ yd}$$

$$TV = 14 \text{ yd}$$

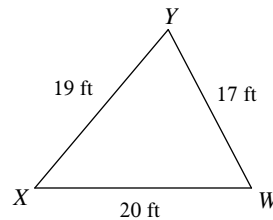
$$TU = 9 \text{ yd}$$

Name the largest and smallest angle in each triangle.

5)



6)



7) In $\triangle UVW$

$$VW = 13 \text{ m}$$

$$UW = 11.7 \text{ m}$$

$$UV = 5.8 \text{ m}$$

8) In $\triangle EFG$

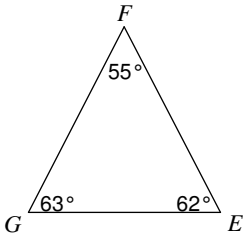
$$FG = 10.9 \text{ in}$$

$$EG = 17 \text{ in}$$

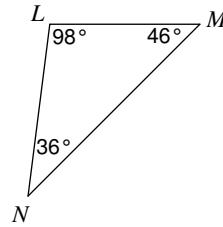
$$EF = 10.9 \text{ in}$$

Order the sides of each triangle from shortest to longest.

9)



10)



11) In $\triangle VWX$

$$m\angle V = 50^\circ$$

$$m\angle W = 48^\circ$$

$$m\angle X = 82^\circ$$

12) In $\triangle STU$

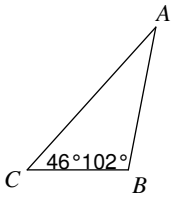
$$m\angle S = 50^\circ$$

$$m\angle T = 70^\circ$$

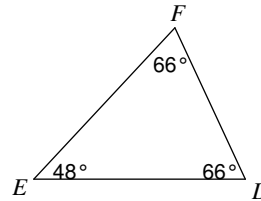
$$m\angle U = 60^\circ$$

Name the longest and shortest side in each triangle.

13)



14)



15) In $\triangle DEF$

$$m\angle D = 35^\circ$$

$$m\angle F = 95^\circ$$

16) In $\triangle KLM$

$$m\angle K = 50^\circ$$

$$m\angle L = 100^\circ$$

$$m\angle M = 30^\circ$$

Critical thinking questions:

17) In triangle ABC:

AB is the longest side.

70° is the measure of angle B.

Find the range of possible measures for angle A.

18) In triangle XYZ:

XY is the shortest side.

30° is the measure of angle Y.

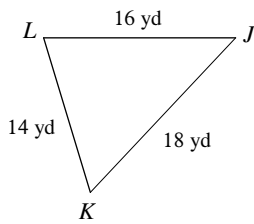
Find the range of possible measures for angle X.

Inequalities in One Triangle

Date _____ Period _____

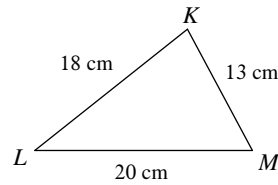
Order the angles in each triangle from smallest to largest.

1)



$\angle J, \angle K, \angle L$

2)



$\angle L, \angle M, \angle K$

3) In $\triangle RQP$

$$QP = 15 \text{ ft}$$

$$RP = 25 \text{ ft}$$

$$RQ = 13 \text{ ft}$$

$\angle P, \angle R, \angle Q$

4) In $\triangle TUV$

$$UV = 17 \text{ yd}$$

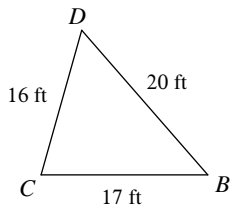
$$TV = 14 \text{ yd}$$

$$TU = 9 \text{ yd}$$

$\angle V, \angle U, \angle T$

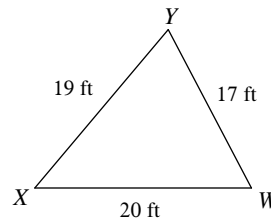
Name the largest and smallest angle in each triangle.

5)



$\angle C, \angle B$

6)



$\angle Y, \angle X$

7) In $\triangle UVW$

$$VW = 13 \text{ m}$$

$$UW = 11.7 \text{ m}$$

$$UV = 5.8 \text{ m}$$

$\angle U, \angle W$

8) In $\triangle EFG$

$$FG = 10.9 \text{ in}$$

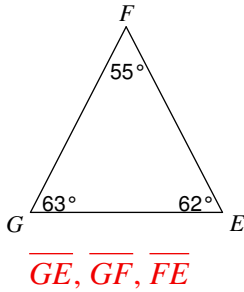
$$EG = 17 \text{ in}$$

$$EF = 10.9 \text{ in}$$

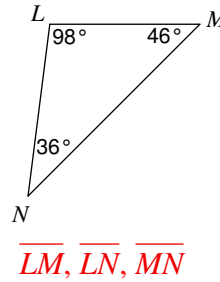
$\angle F; \angle E \text{ and } \angle G$

Order the sides of each triangle from shortest to longest.

9)



10)



11) In $\triangle VWX$

$$m\angle V = 50^\circ$$

$$m\angle W = 48^\circ$$

$$m\angle X = 82^\circ$$

$\overline{VX}, \overline{WX}, \overline{VW}$

12) In $\triangle STU$

$$m\angle S = 50^\circ$$

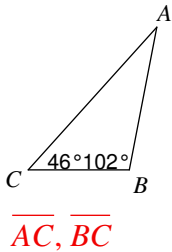
$$m\angle T = 70^\circ$$

$$m\angle U = 60^\circ$$

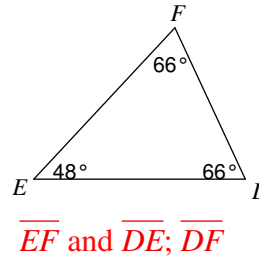
$\overline{TU}, \overline{ST}, \overline{SU}$

Name the longest and shortest side in each triangle.

13)



14)



15) In $\triangle DEF$

$$m\angle D = 35^\circ$$

$$m\angle F = 95^\circ$$

$\overline{DE}, \overline{EF}$

16) In $\triangle KLM$

$$m\angle K = 50^\circ$$

$$m\angle L = 100^\circ$$

$$m\angle M = 30^\circ$$

$\overline{KM}, \overline{KL}$

Critical thinking questions:

17) In triangle ABC:

AB is the longest side.

70° is the measure of angle B.

Find the range of possible measures for angle A.

$$0 < A < 40^\circ$$

18) In triangle XYZ:

XY is the shortest side.

30° is the measure of angle Y.

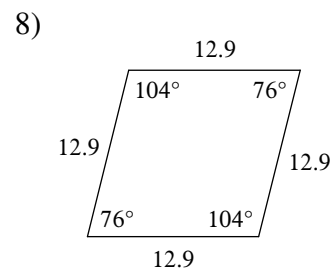
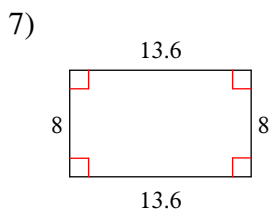
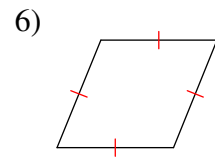
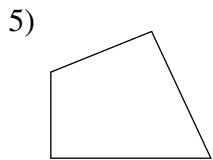
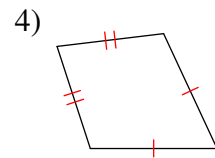
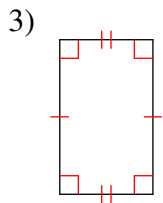
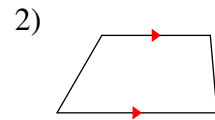
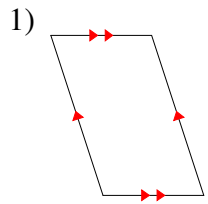
Find the range of possible measures for angle X.

$$0 < X < 150^\circ$$

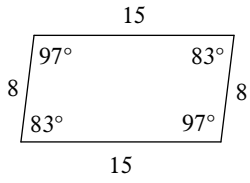
Classifying Quadrilaterals

Date _____ Period _____

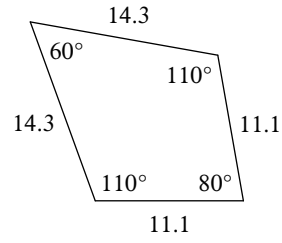
State the most specific name for each figure.



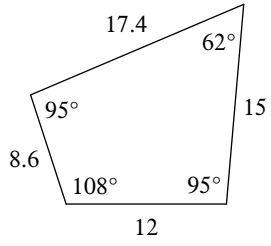
9)



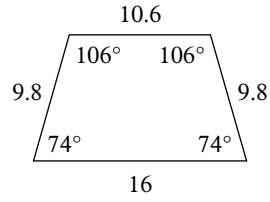
10)



11)

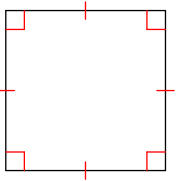


12)

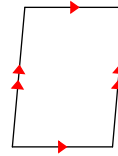


State all possible name for each figure.

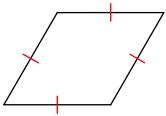
13)



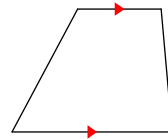
14)



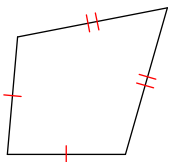
15)



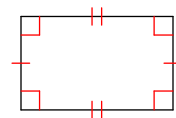
16)



17)



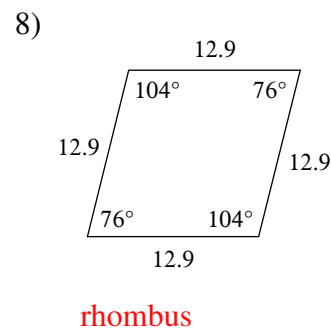
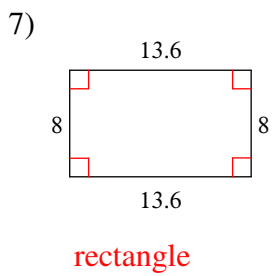
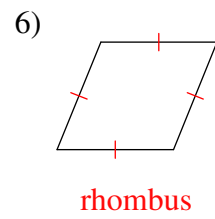
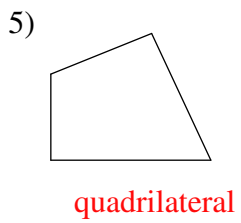
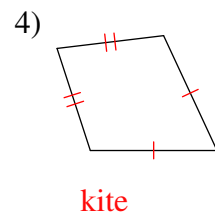
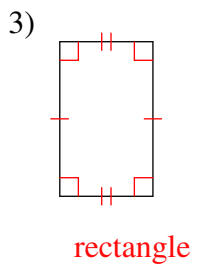
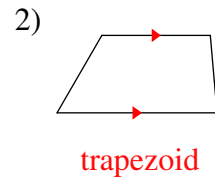
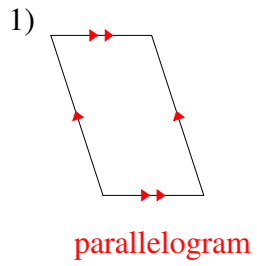
18)



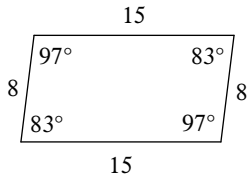
Classifying Quadrilaterals

Date _____ Period _____

State the most specific name for each figure.

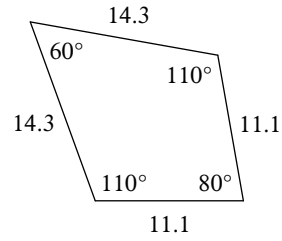


9)



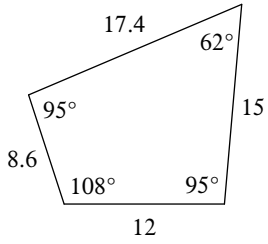
parallelogram

10)



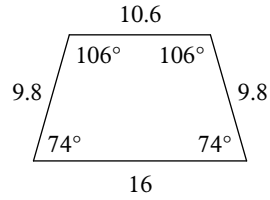
kite

11)



quadrilateral

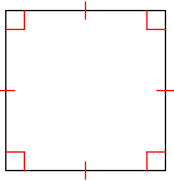
12)



isosceles trapezoid

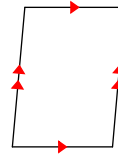
State all possible name for each figure.

13)



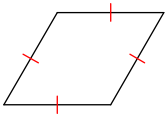
quadrilateral, parallelogram, rhombus, rectangle, square

14)



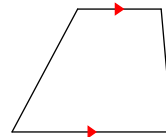
quadrilateral, parallelogram

15)



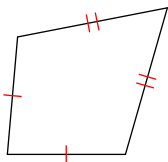
quadrilateral, parallelogram, rhombus

16)



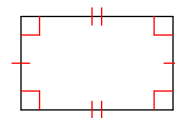
quadrilateral, trapezoid

17)



quadrilateral, kite

18)

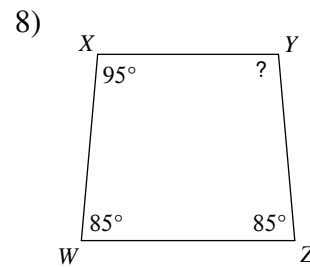
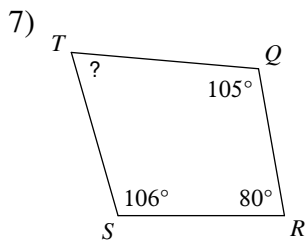
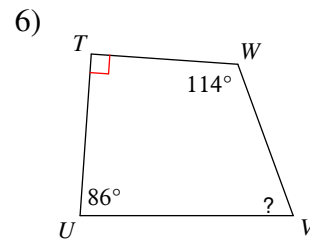
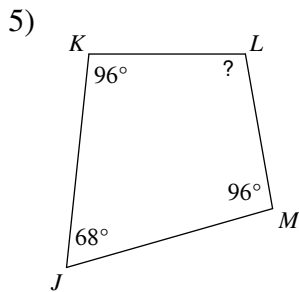
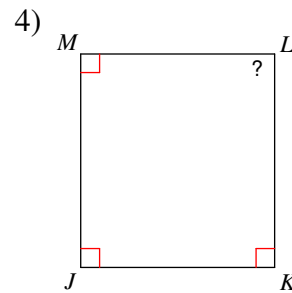
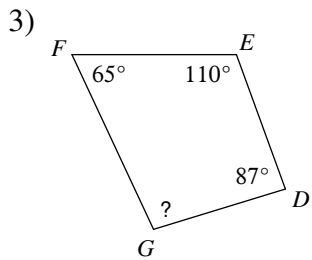
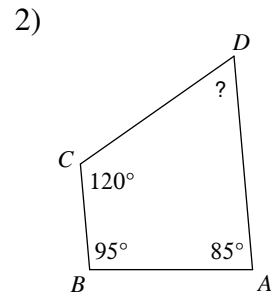
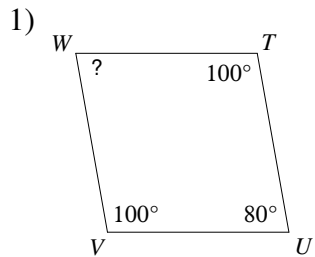


quadrilateral, parallelogram, rectangle

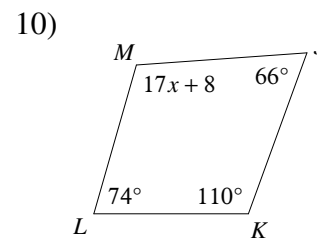
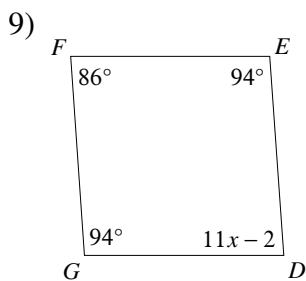
Angles in Quadrilaterals

Date _____ Period _____

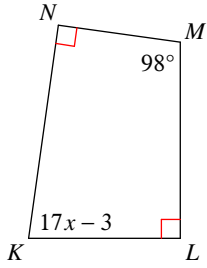
Find the measure of each angle indicated.



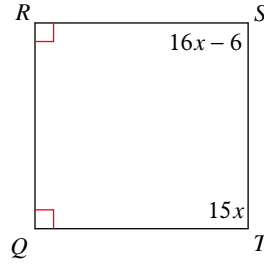
Solve for x .



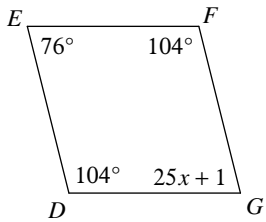
11)



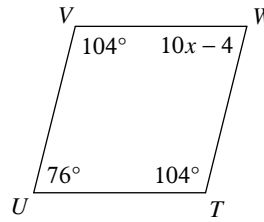
12)



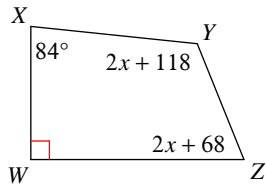
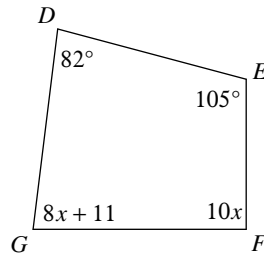
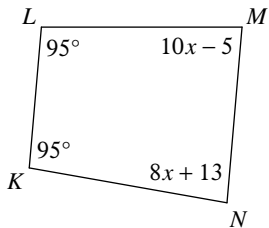
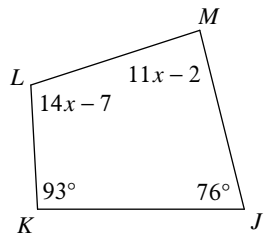
13)



14)



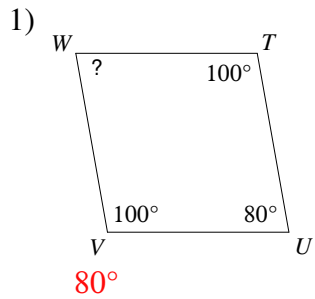
Find the measure of each angle indicated.

15) $m\angle Y$ 16) $m\angle F$ 17) $m\angle M$ 18) $m\angle M$ 

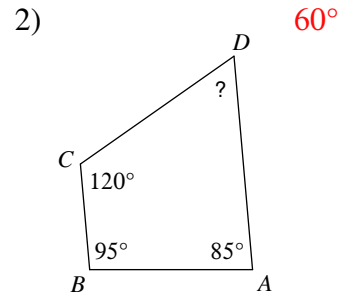
Angles in Quadrilaterals

Date _____ Period _____

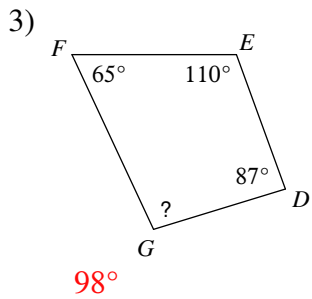
Find the measure of each angle indicated.



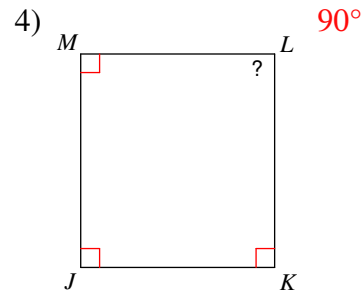
80°



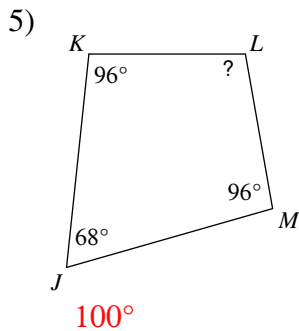
60°



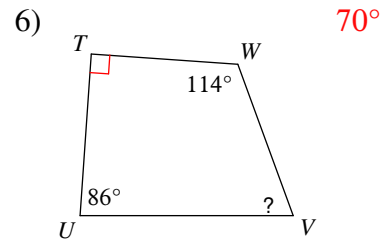
98°



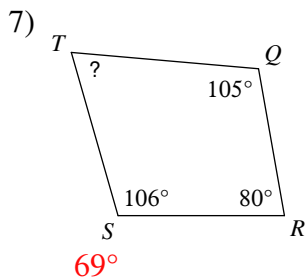
90°



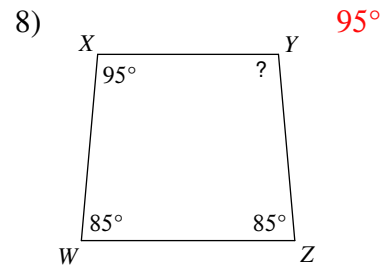
100°



70°

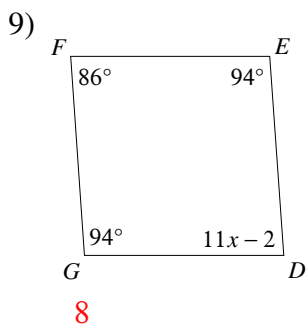


69°

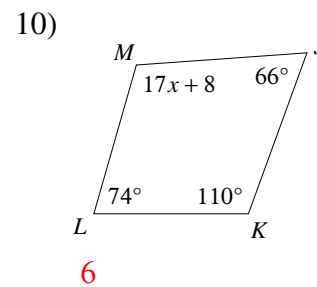


95°

Solve for x .

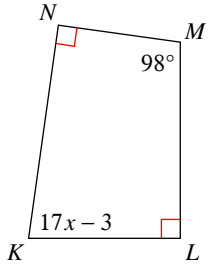


8



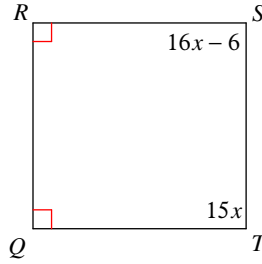
6

11)



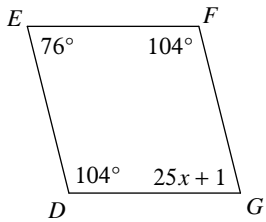
5

12)



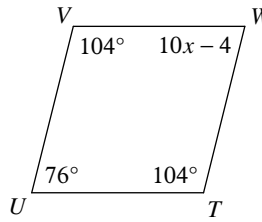
6

13)



3

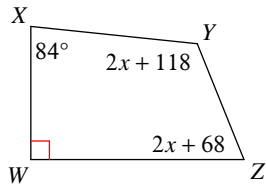
14)



8

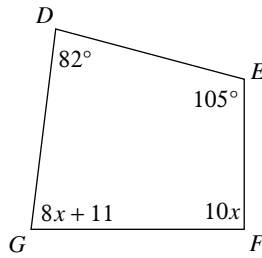
Find the measure of each angle indicated.

15) $m\angle Y$



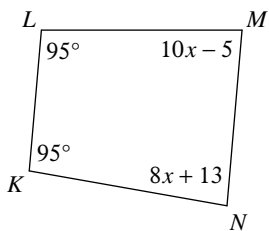
118°

16) $m\angle F$



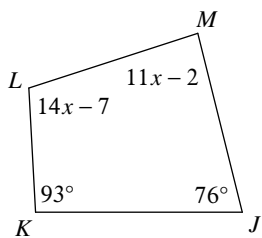
90°

17) $m\angle M$



85°

18) $m\angle M$



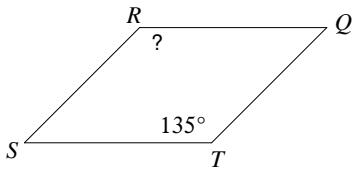
86°

Properties of Parallelograms

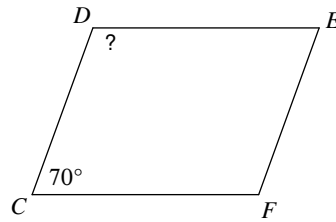
Date _____ Period _____

Find the measurement indicated in each parallelogram.

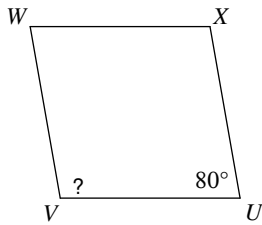
1)



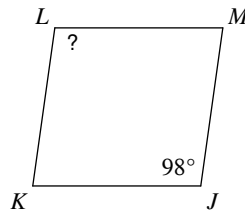
2)



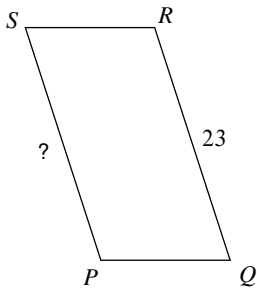
3)



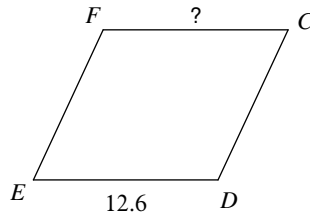
4)



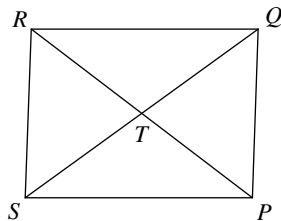
5)



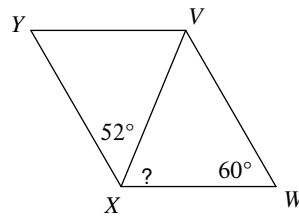
6)



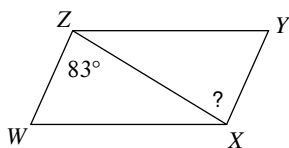
7) $RT = 19.8$
Find RP



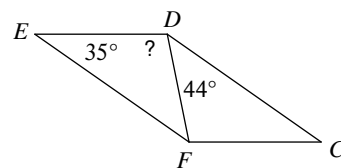
8)



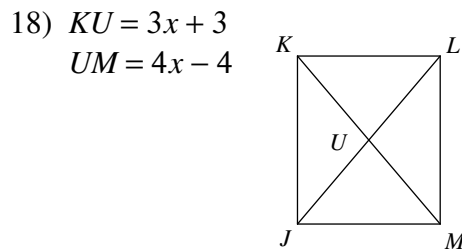
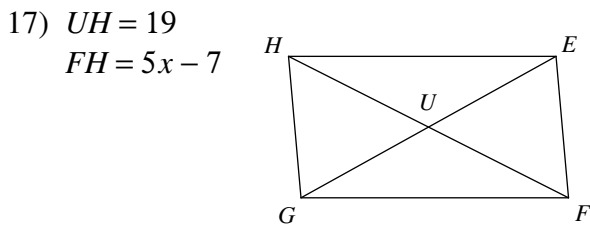
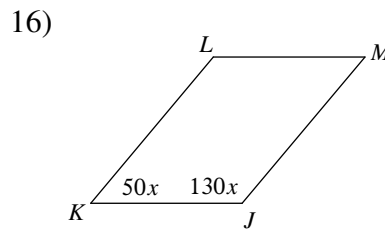
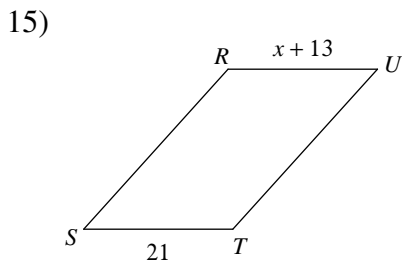
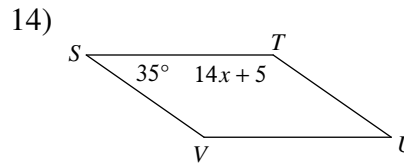
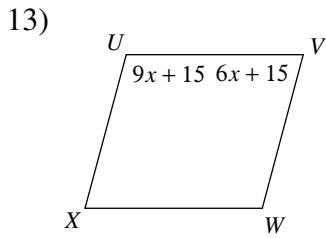
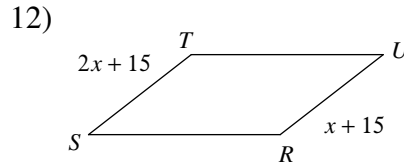
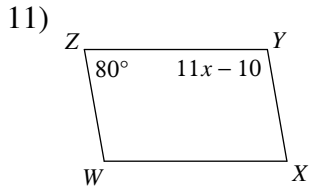
9)



10)

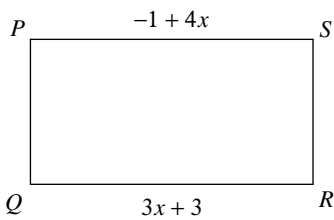


Solve for x . Each figure is a parallelogram.

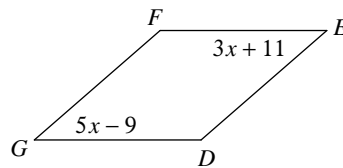


Find the measurement indicated in each parallelogram.

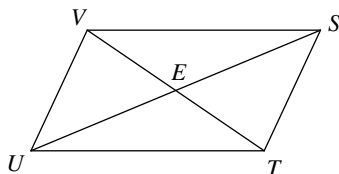
19) Find RQ



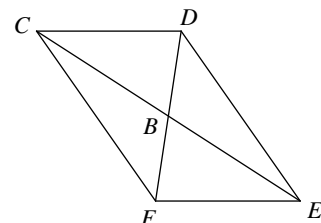
20) Find $m\angle G$



21) $TE = 4 + 2x$
 $EV = 4x - 4$
Find TE



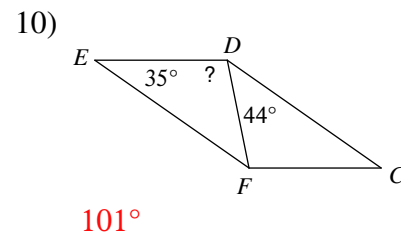
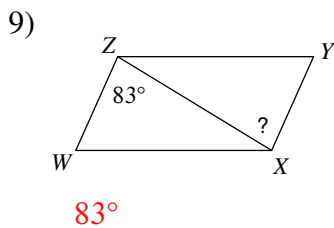
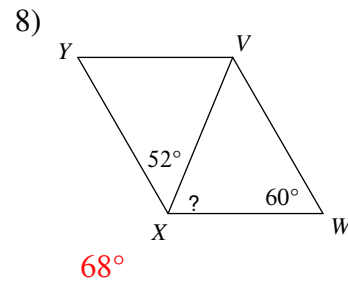
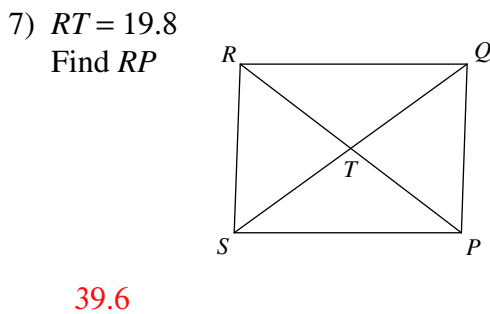
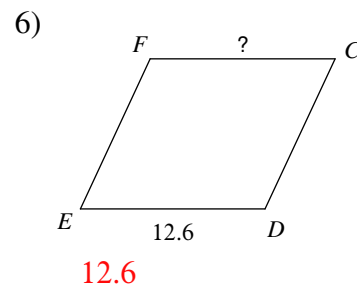
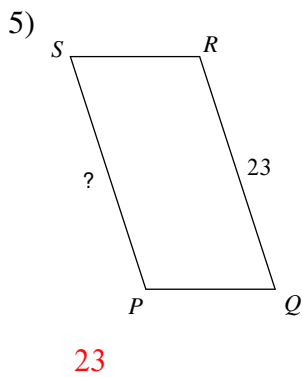
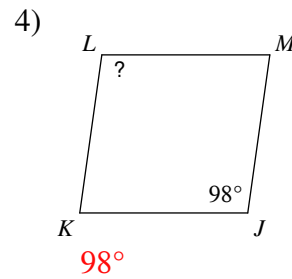
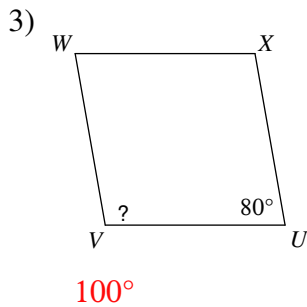
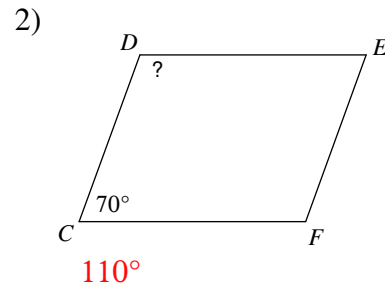
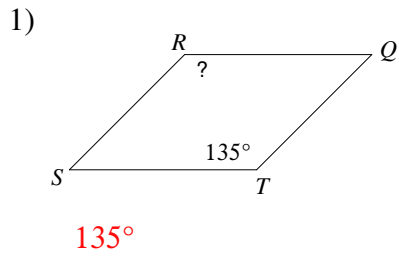
22) $DB = 5x - 1$
 $BF = 5 + 3x$
Find DB



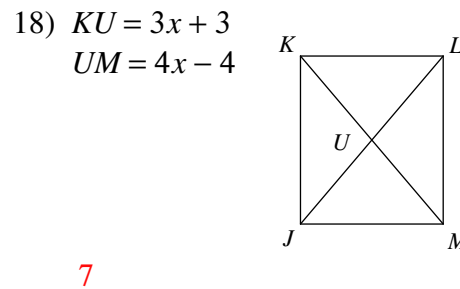
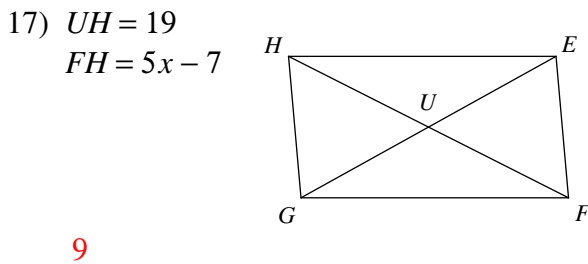
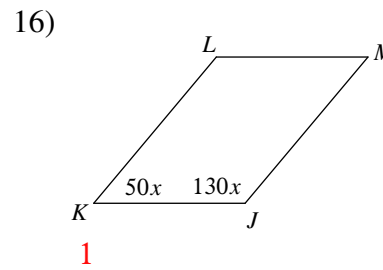
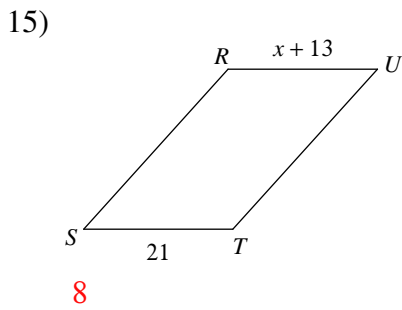
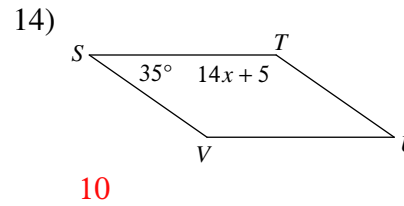
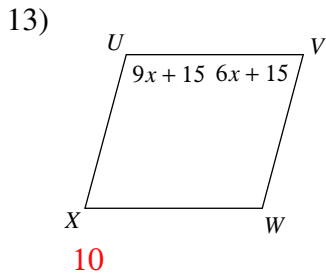
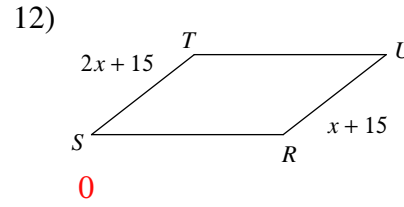
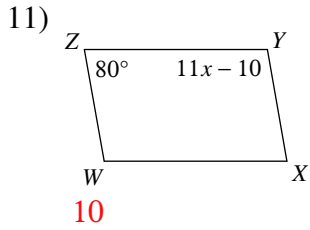
Properties of Parallelograms

Date _____ Period _____

Find the measurement indicated in each parallelogram.

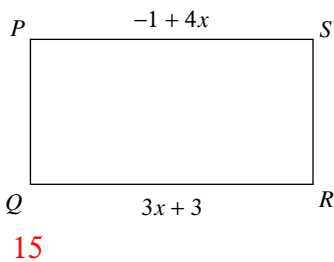


Solve for x . Each figure is a parallelogram.

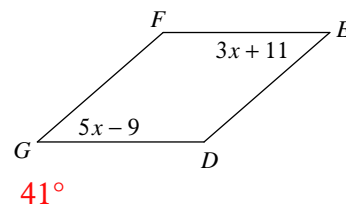


Find the measurement indicated in each parallelogram.

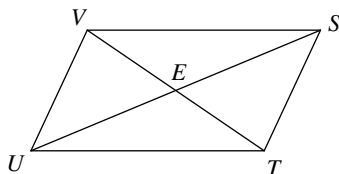
19) Find RQ



20) Find $m\angle G$

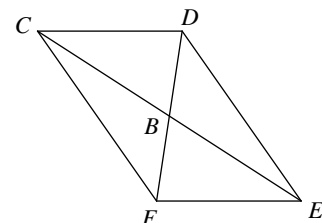


21) $TE = 4 + 2x$
 $EV = 4x - 4$
Find TE



12

22) $DB = 5x - 1$
 $BF = 5 + 3x$
Find DB

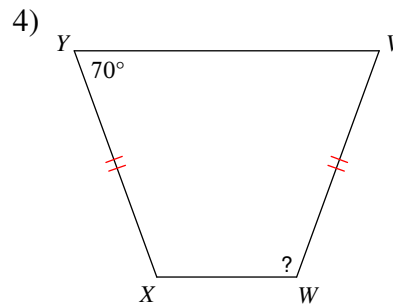
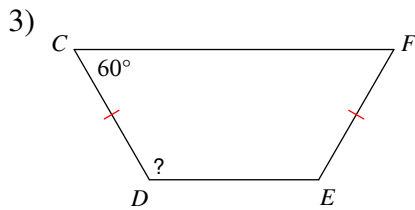
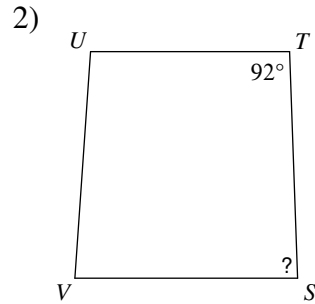
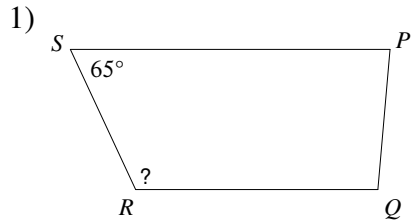


14

Properties of Trapezoids

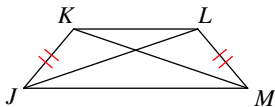
Date _____ Period _____

Find the length of the angle indicated for each trapezoid.

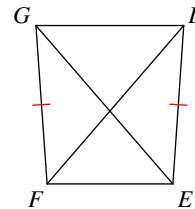


Find the length of the diagonal indicated for each trapezoid.

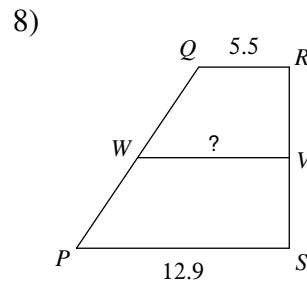
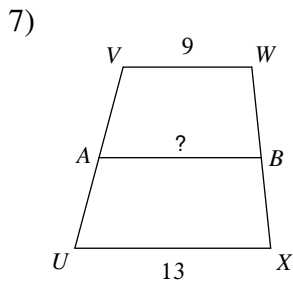
5) $KM = 22$
Find JL



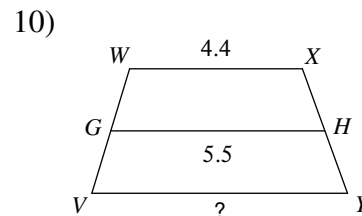
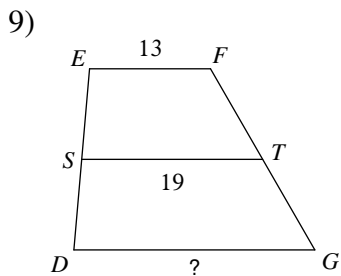
6) $DF = 8.7$
Find EG



Find the length of the median of each trapezoid.

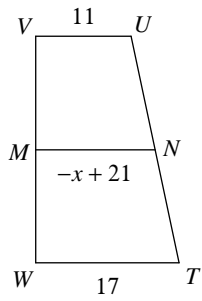


Find the length of the base indicated for each trapezoid.

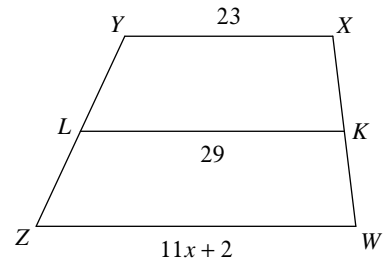


Solve for x . Each figure is a trapezoid.

11)

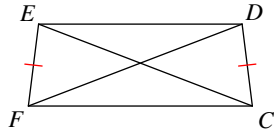


12)

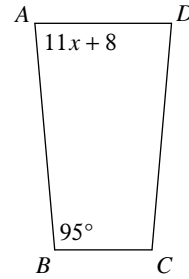


13) $EC = 20$

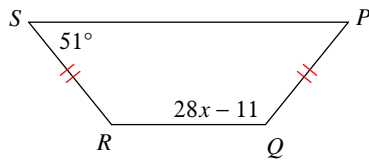
$FD = 5x - 10$



14)

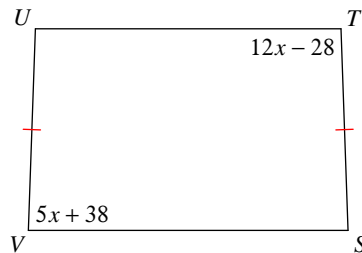


15)

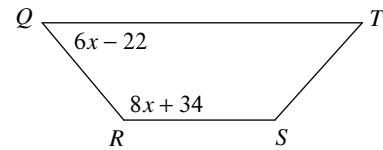


Find the length of the angle indicated for each trapezoid.

16) Find $m\angle V$

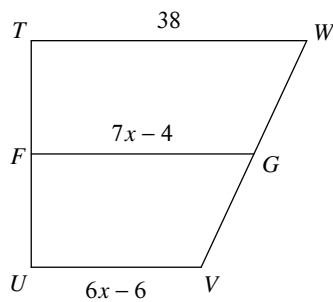


17) Find $m\angle R$



Find the length of the base indicated for each trapezoid.

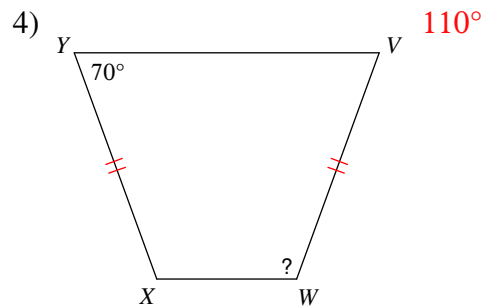
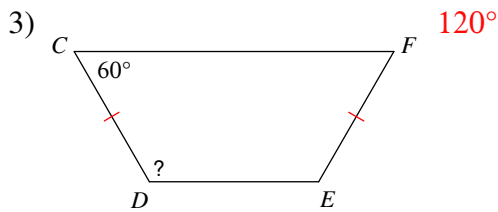
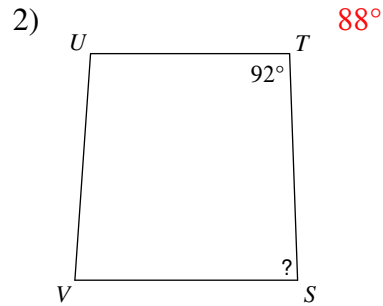
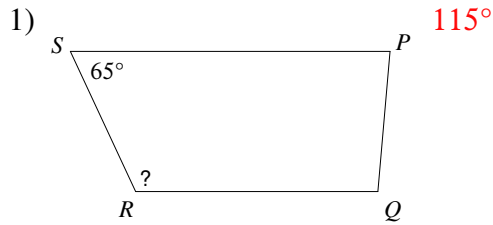
18) Find VU



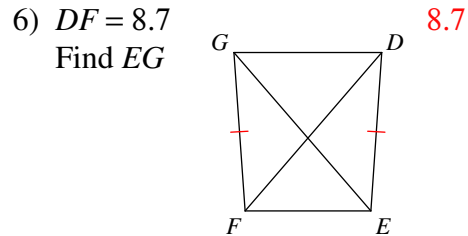
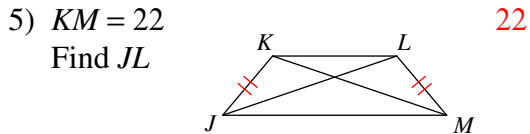
Properties of Trapezoids

Date _____ Period _____

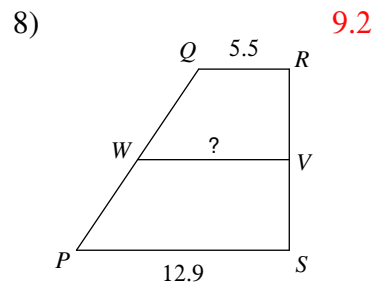
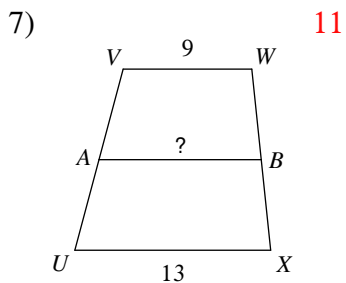
Find the length of the angle indicated for each trapezoid.



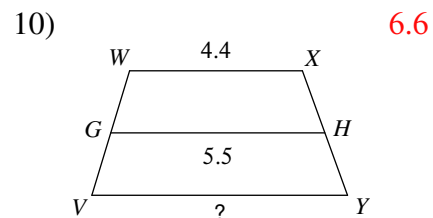
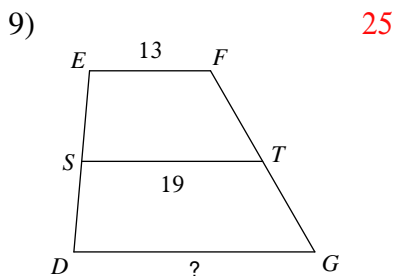
Find the length of the diagonal indicated for each trapezoid.



Find the length of the median of each trapezoid.

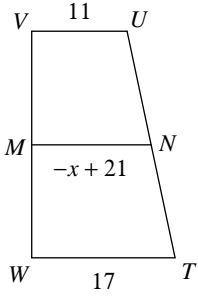


Find the length of the base indicated for each trapezoid.

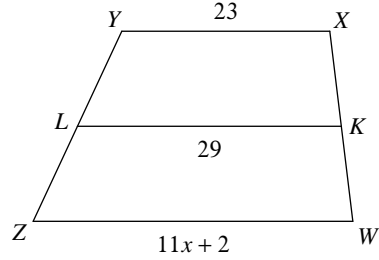


Solve for x . Each figure is a trapezoid.

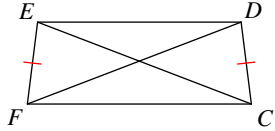
11) 7



12) 3

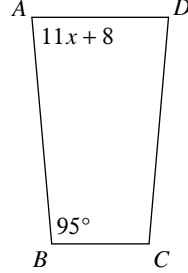


13) $EC = 20$
 $FD = 5x - 10$

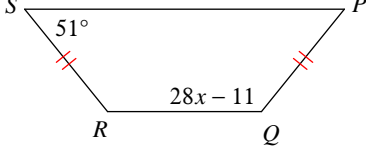


6

14) 7

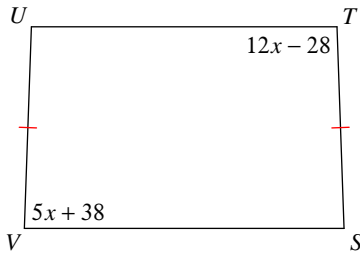


15) 5

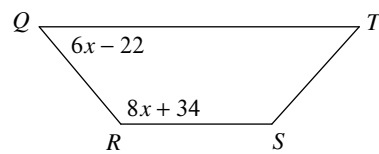


Find the length of the angle indicated for each trapezoid.

16) Find $m\angle V$ 88°

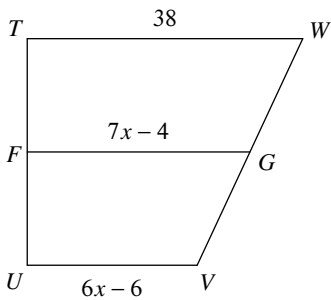


17) Find $m\angle R$ 130°



Find the length of the base indicated for each trapezoid.

18) Find VU 24

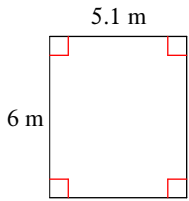


Area of Triangles and Quadrilaterals

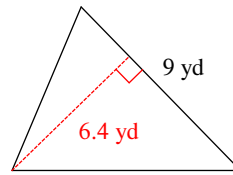
Date _____ Period _____

Find the area of each.

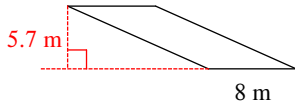
1)



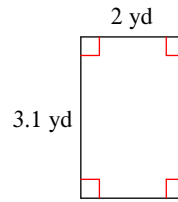
2)



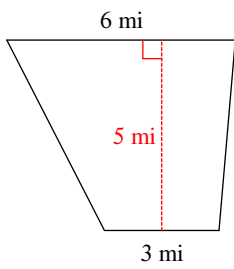
3)



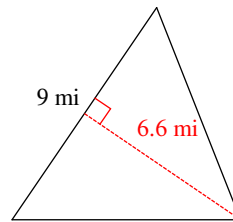
4)



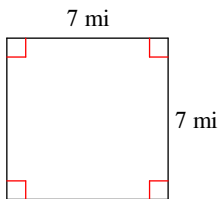
5)



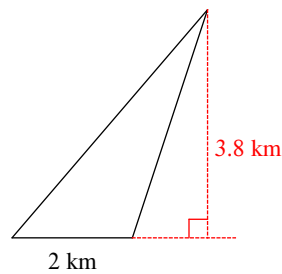
6)



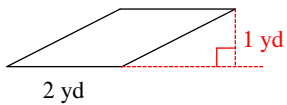
7)



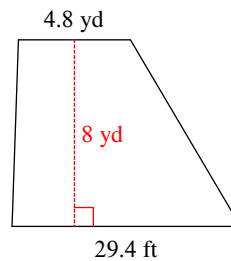
8)

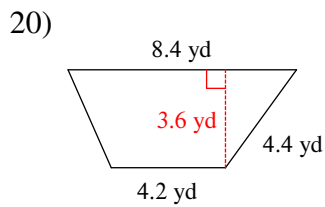
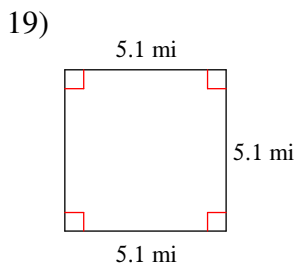
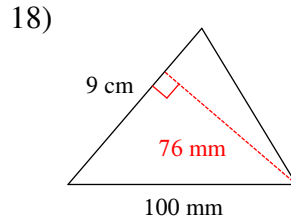
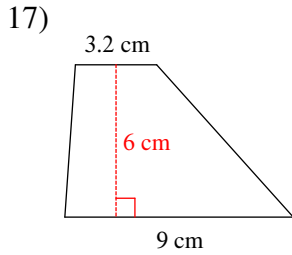
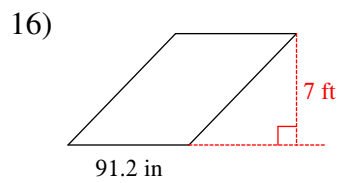
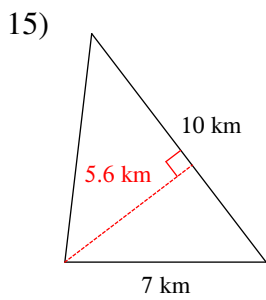
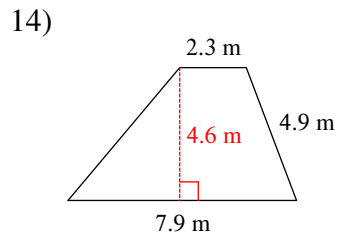
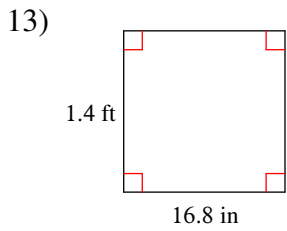
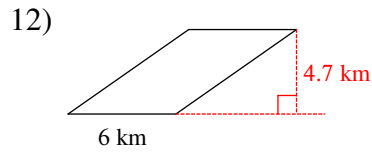
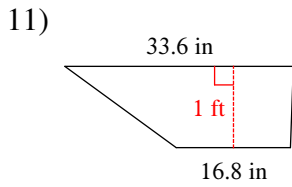


9)



10)





Critical thinking questions:

21) Sketch and label a trapezoid that has an area of 100 cm^2 .

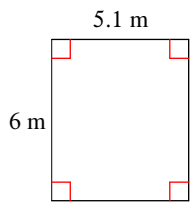
22) Change one number in the diagram you drew for the last question so that the area is now 200 cm^2 .

Area of Triangles and Quadrilaterals

Date _____ Period _____

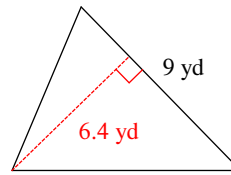
Find the area of each.

1)



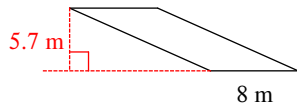
30.6 m^2

2)



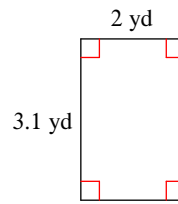
28.8 yd^2

3)



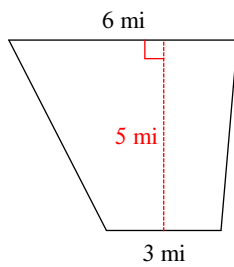
45.6 m^2

4)



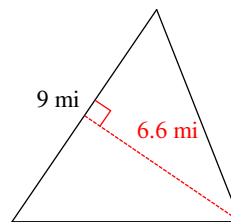
6.2 yd^2

5)



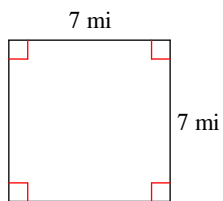
22.5 mi^2

6)



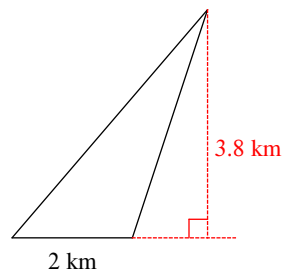
29.7 mi^2

7)



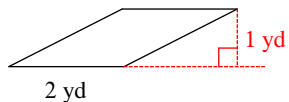
49 mi^2

8)



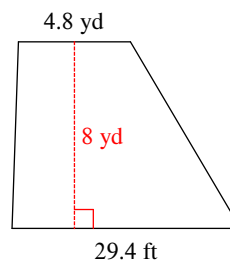
3.8 km^2

9)

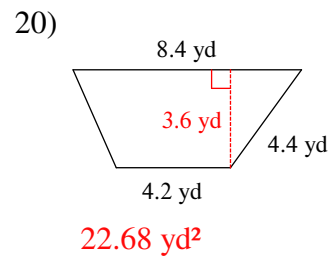
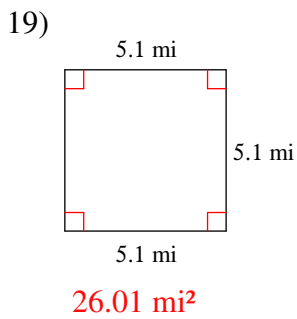
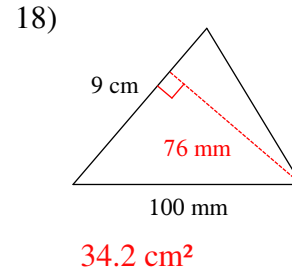
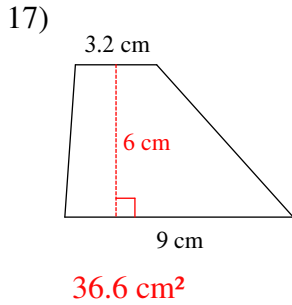
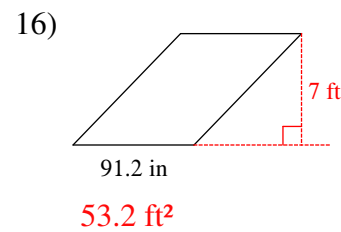
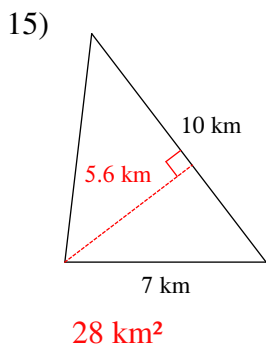
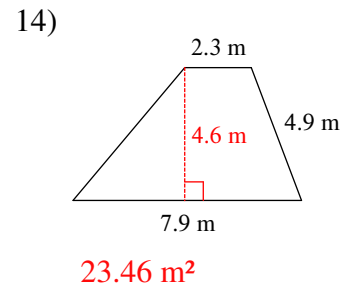
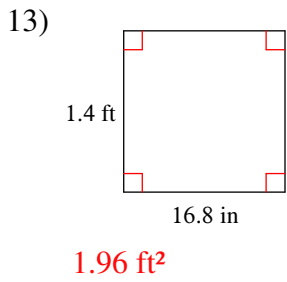
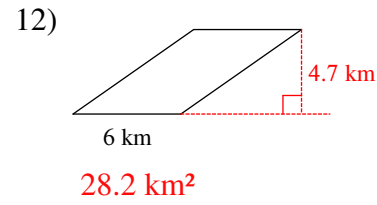
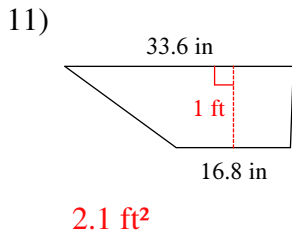


2 yd^2

10)



58.4 yd^2



Critical thinking questions:

21) Sketch and label a trapezoid that has an area of 100 cm^2 .
Many answers

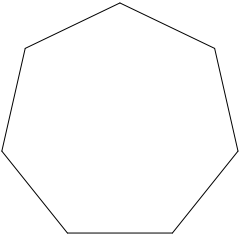
22) Change one number in the diagram you drew for the last question so that the area is now 200 cm^2 .
(Double the height)

Introduction to Polygons

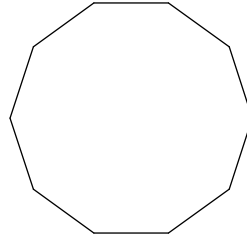
Date _____ Period _____

Write the name of each polygon.

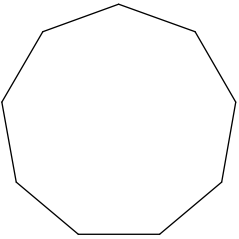
1)



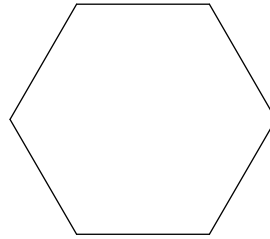
2)



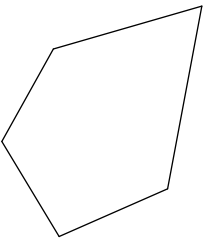
3)



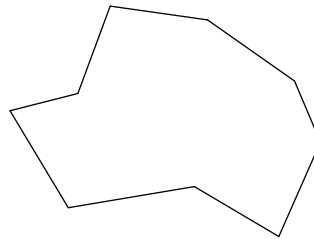
4)



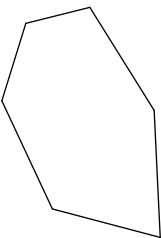
5)



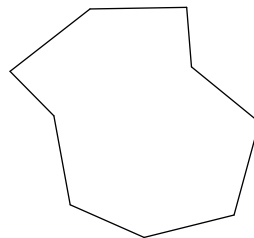
6)



7)

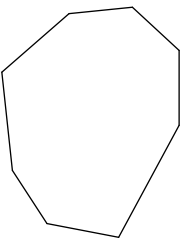


8)

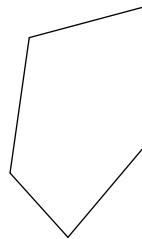


State if each polygon is concave or convex.

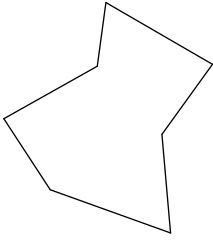
9)



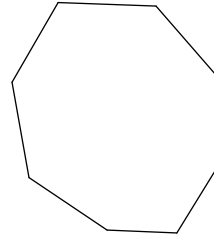
10)



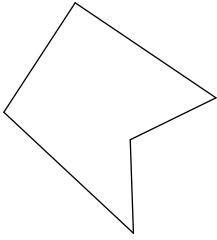
11)



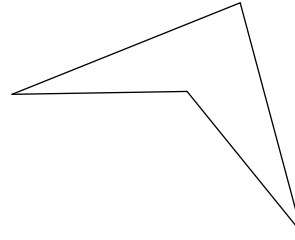
12)



13)

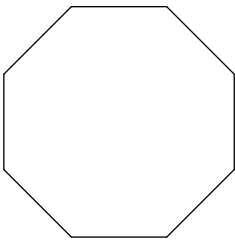


14)

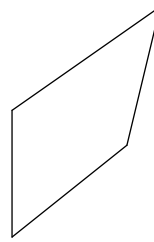


State if each polygon is regular or not.

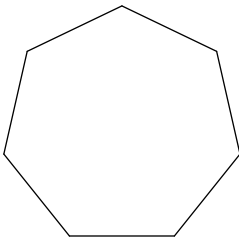
15)



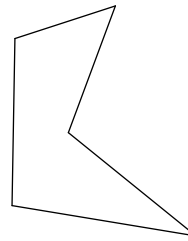
16)



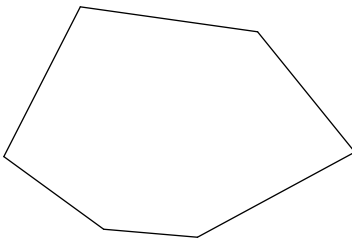
17)



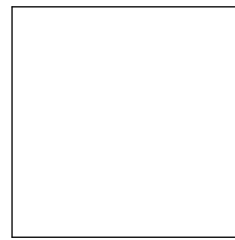
18)



19)



20)



Critical thinking questions:

21) Sketch a concave hexagon.

22) Which are impossible:

Regular convex octagon

Concave trapezoid

Convex irregular 20-gon

Concave triangle

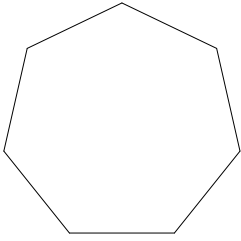
Concave equilateral pentagon

Introduction to Polygons

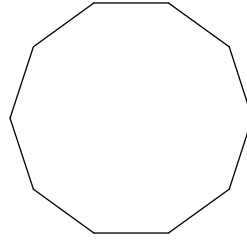
Date _____ Period _____

Write the name of each polygon.

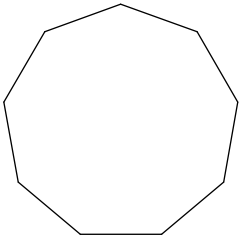
1) heptagon



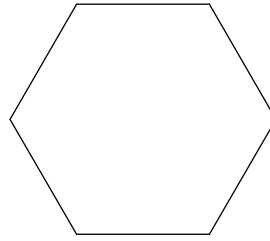
2) decagon



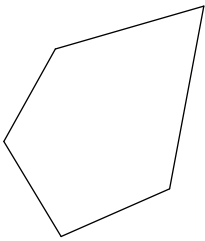
3) nonagon



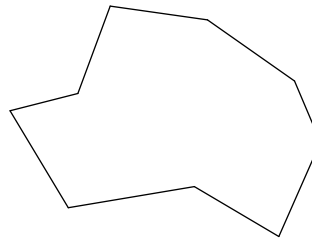
4) hexagon



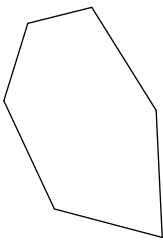
5) pentagon



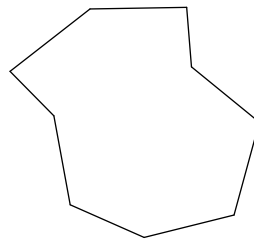
6) nonagon



7) hexagon

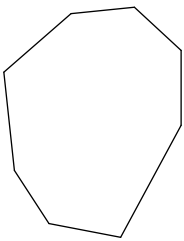


8) nonagon

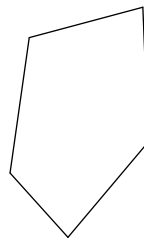


State if each polygon is concave or convex.

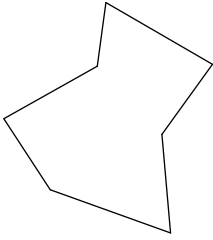
9) convex



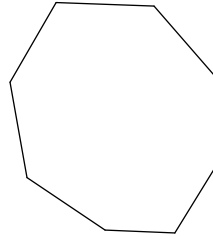
10) convex



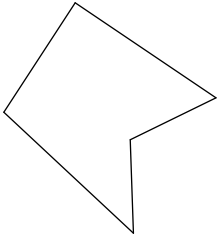
11) concave



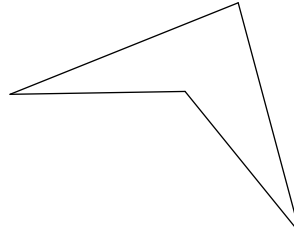
12) convex



13) concave

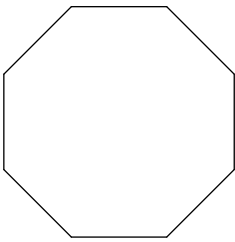


14) concave

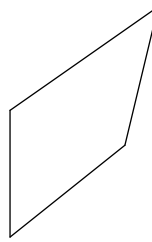


State if each polygon is regular or not.

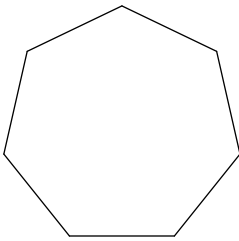
15) regular



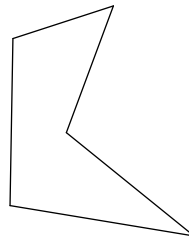
16) not regular



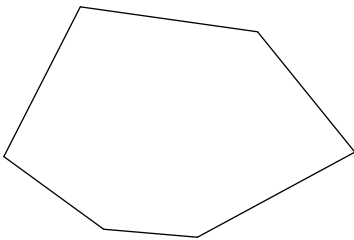
17) regular



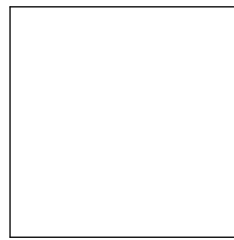
18) not regular



19) not regular



20) regular



Critical thinking questions:

21) Sketch a concave hexagon.

Many answers.

22) Which are impossible:

Regular convex octagon

Concave trapezoid

Convex irregular 20-gon

Concave triangle

Concave equilateral pentagon

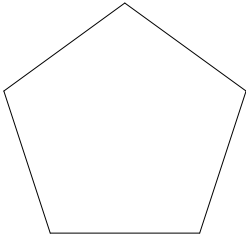
Concave trapezoid, concave triangle

Polygons and Angles

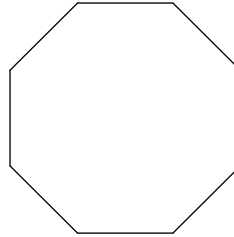
Date _____ Period _____

Find the measure of one interior angle in each polygon. Round your answer to the nearest tenth if necessary.

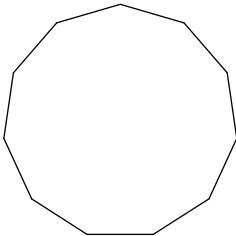
1)



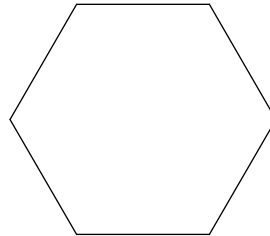
2)



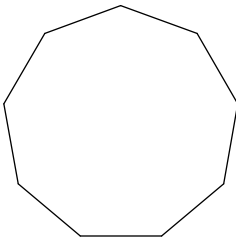
3)



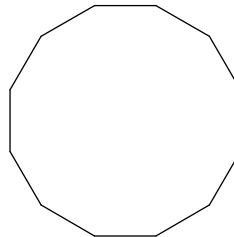
4)



5)



6)



7) regular 24-gon

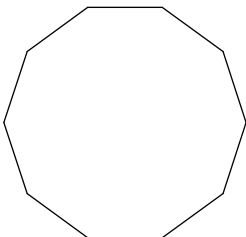
8) regular quadrilateral

9) regular 23-gon

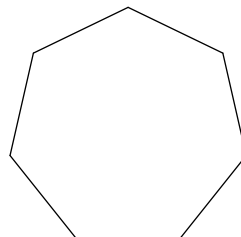
10) regular 16-gon

Find the measure of one exterior angle in each polygon. Round your answer to the nearest tenth if necessary.

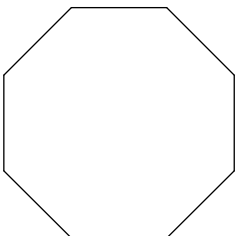
11)



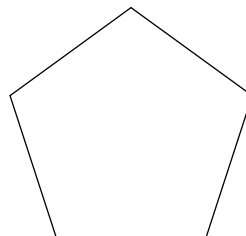
12)



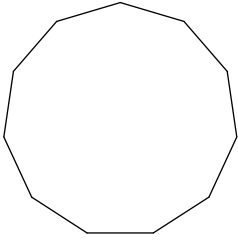
13)



14)



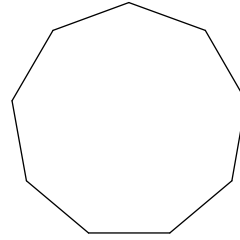
15)



17) regular 13-gon

19) regular 20-gon

16)

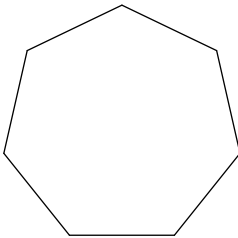


18) regular 16-gon

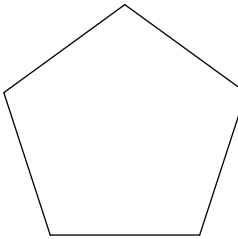
20) regular 23-gon

Find the interior angle sum for each polygon. Round your answer to the nearest tenth if necessary.

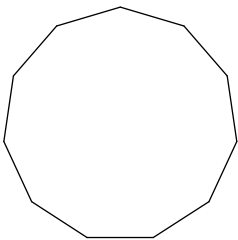
21)



23)



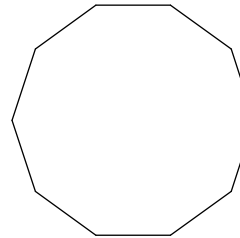
25)



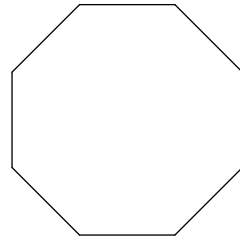
27) regular quadrilateral

29) regular dodecagon

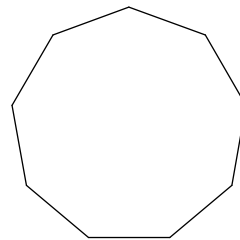
22)



24)



26)



28) regular 18-gon

30) regular 15-gon

Critical thinking questions:

31) What is the exterior angle sum of a 500-gon?

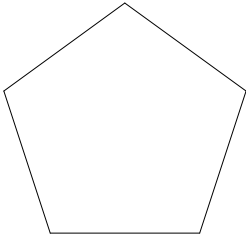
32) Is there a regular polygon with an interior angle sum of 9000° ? If so, what is it?

Polygons and Angles

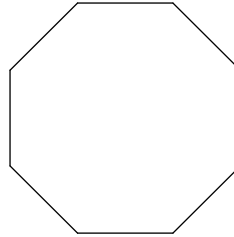
Date _____ Period _____

Find the measure of one interior angle in each polygon. Round your answer to the nearest tenth if necessary.

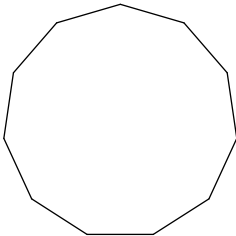
1) 108°



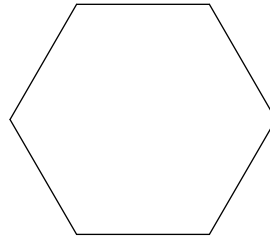
2) 135°



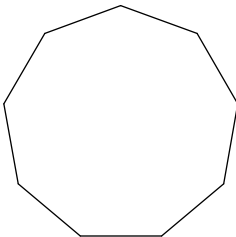
3) 147.3°



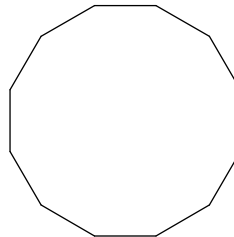
4) 120°



5) 140°



6) 150°



7) regular 24-gon 165°

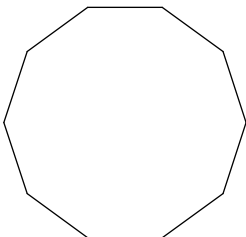
8) regular quadrilateral 90°

9) regular 23-gon 164.3°

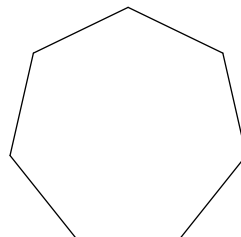
10) regular 16-gon 157.5°

Find the measure of one exterior angle in each polygon. Round your answer to the nearest tenth if necessary.

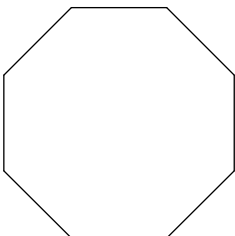
11) 36°



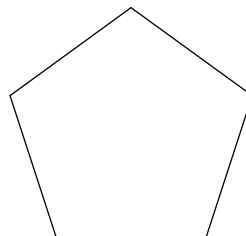
12) 51.4°



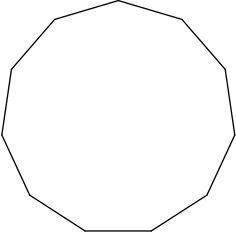
13) 45°



14) 72°



15)



32.7°

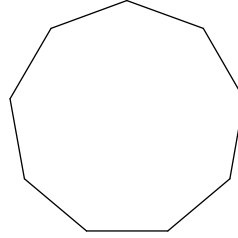
17) regular 13-gon

27.7°

19) regular 20-gon

18°

16)



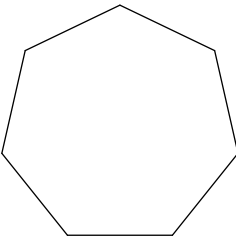
40°

18) regular 16-gon 22.5°

20) regular 23-gon 15.7°

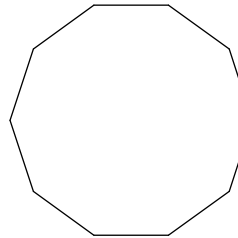
Find the interior angle sum for each polygon. Round your answer to the nearest tenth if necessary.

21)



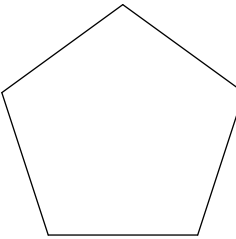
900°

22)



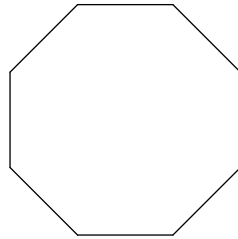
1440°

23)



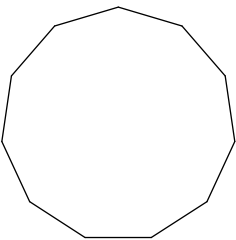
540°

24)



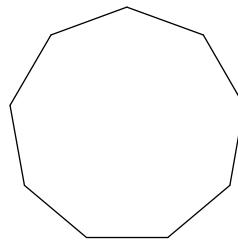
1080°

25)



1620°

26)



1260°

27) regular quadrilateral

360°

28) regular 18-gon 2880°

29) regular dodecagon

1800°

30) regular 15-gon 2340°

Critical thinking questions:

31) What is the exterior angle sum of a 500-gon?

360°

32) Is there a regular polygon with an interior angle sum of 9000° ? If so, what is it?

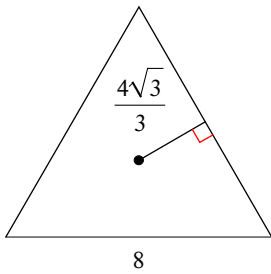
Yes, regular 52-gon.

Area of Regular Polygons

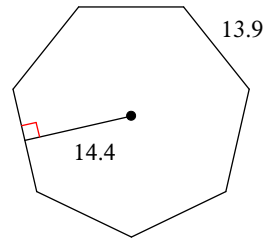
Date _____ Period _____

Find the area of each regular polygon. Leave your answer in simplest form.

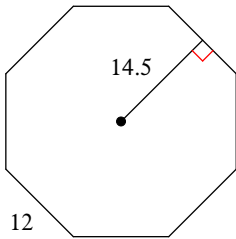
1)



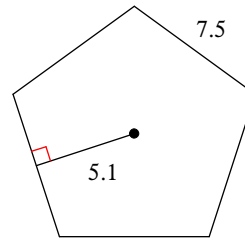
2)



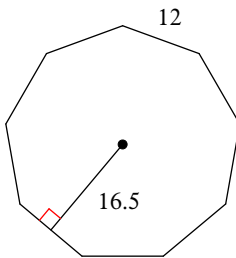
3)



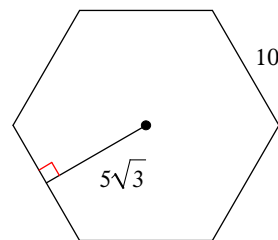
4)



5)



6)



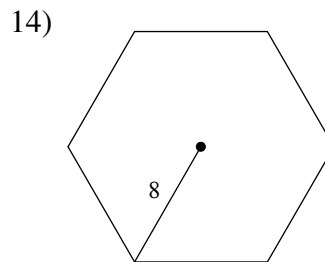
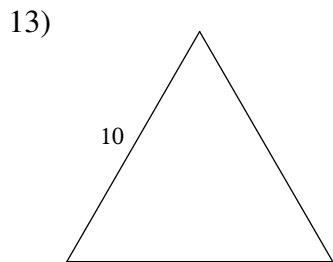
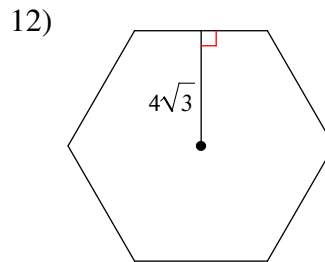
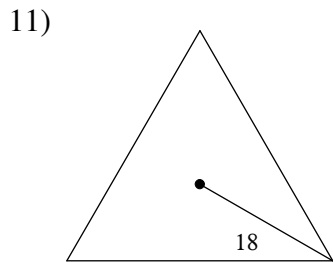
7) pentagon
apothem = 7.3
side = 10.6

8) triangle
apothem = 14
side = $28\sqrt{3}$

- 9) 7-gon
 apothem = 21.8
 side = 21

- 10) octagon
 apothem = 14.1
 side = 11.7

Use what you know about special right triangles to find the area of each regular polygon. Leave your answer in simplest form.



- 15) quadrilateral
 radius = $16\sqrt{2}$

- 16) hexagon
 side = $\frac{16\sqrt{3}}{3}$

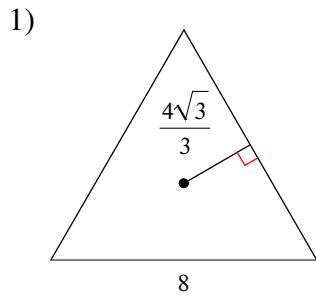
Critical thinking questions:

- 17) Find the perimeter of a regular hexagon that has an area of $54\sqrt{3}$ units².
- 18) Can a regular octagon have an area of 10 units²?

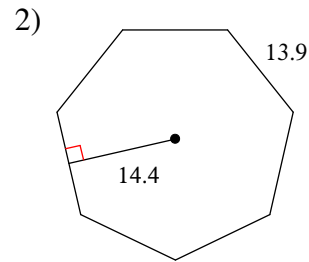
Area of Regular Polygons

Date _____ Period _____

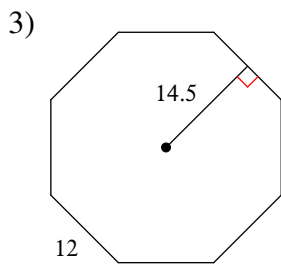
Find the area of each regular polygon. Leave your answer in simplest form.



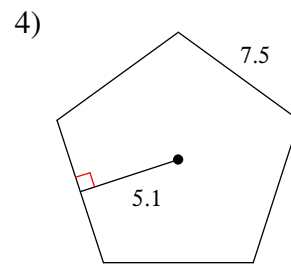
$16\sqrt{3}$



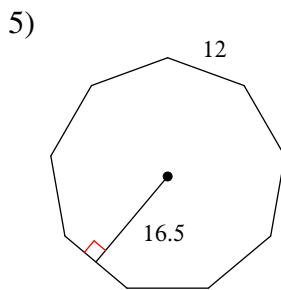
700.56



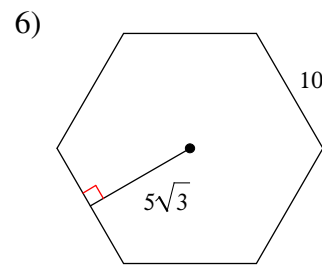
696



95.625



891



$150\sqrt{3}$

7) pentagon
 apothem = 7.3
 side = 10.6

193.45

8) triangle
 apothem = 14
 side = $28\sqrt{3}$

$588\sqrt{3}$

9) 7-gon
apothem = 21.8
side = 21

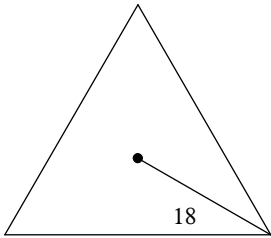
1602.3

10) octagon
apothem = 14.1
side = 11.7

659.88

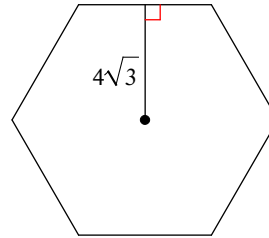
Use what you know about special right triangles to find the area of each regular polygon. Leave your answer in simplest form.

11)



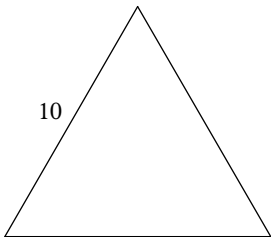
$243\sqrt{3}$

12)



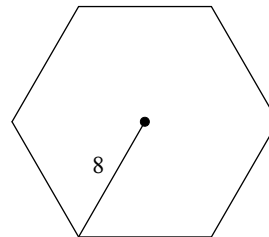
$96\sqrt{3}$

13)



$25\sqrt{3}$

14)



$96\sqrt{3}$

15) quadrilateral
radius = $16\sqrt{2}$

1024

16) hexagon
side = $\frac{16\sqrt{3}}{3}$

$128\sqrt{3}$

Critical thinking questions:

17) Find the perimeter of a regular hexagon that has an area of $54\sqrt{3}$ units².

36 units

18) Can a regular octagon have an area of 10 units²?

Yes, it just wouldn't have integral length sides.

Solving Proportions

Date _____ Period _____

Solve each proportion. Leave your answer as a fraction in simplest form.

$$1) \frac{6}{2} = \frac{4}{p}$$

$$2) \frac{4}{k} = \frac{8}{2}$$

$$3) \frac{n}{4} = \frac{8}{7}$$

$$4) \frac{5}{3} = \frac{x}{4}$$

$$5) \frac{m}{5} = \frac{7}{2}$$

$$6) \frac{7}{4} = \frac{r}{5}$$

$$7) \frac{7}{6} = \frac{5}{x}$$

$$8) \frac{6}{5} = \frac{2}{5n}$$

Solve each proportion. Round your answers to the nearest hundredth.

$$9) \frac{7.7}{3.6} = \frac{2.3}{b}$$

$$10) \frac{v}{4.9} = \frac{5.4}{6.1}$$

$$11) \frac{6.3}{x} = \frac{2.56}{9.3}$$

$$12) \frac{3.4}{x} = \frac{2.17}{7.7}$$

Solve each proportion. Leave your answer as a fraction in simplest form.

$$13) \frac{9}{8} = \frac{k+6}{6}$$

$$14) \frac{2}{10} = \frac{4}{a-3}$$

$$15) \frac{10}{p+2} = \frac{4}{3}$$

$$16) \frac{4}{6} = \frac{8}{x-1}$$

$$17) \frac{m}{8} = \frac{m+7}{9}$$

$$18) \frac{n}{n+1} = \frac{3}{5}$$

$$19) \frac{9}{4} = \frac{r-10}{r}$$

$$20) \frac{x+6}{x} = \frac{10}{7}$$

$$21) \frac{n-9}{n+5} = \frac{7}{4}$$

$$22) \frac{6}{b+9} = \frac{4}{b+5}$$

$$23) \frac{8}{3} = \frac{v-9}{7v+4}$$

$$24) \frac{8}{5x-4} = \frac{6}{x+5}$$

Critical thinking questions:

25) Do you think that a person's age and the amount they eat each day are basically in proportion?

26) Find one solution to:

$$\frac{x}{4} = \frac{7}{y}$$

Solving Proportions

Date _____ Period _____

Solve each proportion. Leave your answer as a fraction in simplest form.

$$1) \frac{6}{2} = \frac{4}{p}$$

$$\left\{ \frac{4}{3} \right\}$$

$$2) \frac{4}{k} = \frac{8}{2}$$

$$\{1\}$$

$$3) \frac{n}{4} = \frac{8}{7}$$

$$\left\{ \frac{32}{7} \right\}$$

$$4) \frac{5}{3} = \frac{x}{4}$$

$$\left\{ \frac{20}{3} \right\}$$

$$5) \frac{m}{5} = \frac{7}{2}$$

$$\left\{ \frac{35}{2} \right\}$$

$$6) \frac{7}{4} = \frac{r}{5}$$

$$\left\{ \frac{35}{4} \right\}$$

$$7) \frac{7}{6} = \frac{5}{x}$$

$$\left\{ \frac{30}{7} \right\}$$

$$8) \frac{6}{5} = \frac{2}{5n}$$

$$\left\{ \frac{1}{3} \right\}$$

Solve each proportion. Round your answers to the nearest hundredth.

$$9) \frac{7.7}{3.6} = \frac{2.3}{b}$$

$$\{1.07\}$$

$$10) \frac{v}{4.9} = \frac{5.4}{6.1}$$

$$\{4.33\}$$

$$11) \frac{6.3}{x} = \frac{2.56}{9.3}$$

$$\{22.88\}$$

$$12) \frac{3.4}{x} = \frac{2.17}{7.7}$$

$$\{12.06\}$$

Solve each proportion. Leave your answer as a fraction in simplest form.

$$13) \frac{9}{8} = \frac{k+6}{6}$$

$$\left\{ \frac{3}{4} \right\}$$

$$14) \frac{2}{10} = \frac{4}{a-3}$$

$$\{23\}$$

$$15) \frac{10}{p+2} = \frac{4}{3}$$

$$\left\{ \frac{11}{2} \right\}$$

$$16) \frac{4}{6} = \frac{8}{x-1}$$

$$\{13\}$$

$$17) \frac{m}{8} = \frac{m+7}{9}$$

$$\{56\}$$

$$18) \frac{n}{n+1} = \frac{3}{5}$$

$$\left\{ \frac{3}{2} \right\}$$

$$19) \frac{9}{4} = \frac{r-10}{r}$$

$$\{-8\}$$

$$20) \frac{x+6}{x} = \frac{10}{7}$$

$$\{14\}$$

$$21) \frac{n-9}{n+5} = \frac{7}{4}$$

$$\left\{ -\frac{71}{3} \right\}$$

$$22) \frac{6}{b+9} = \frac{4}{b+5}$$

$$\{3\}$$

$$23) \frac{8}{3} = \frac{v-9}{7v+4}$$

$$\left\{ -\frac{59}{53} \right\}$$

$$24) \frac{8}{5x-4} = \frac{6}{x+5}$$

$$\left\{ \frac{32}{11} \right\}$$

Critical thinking questions:

25) Do you think that a person's age and the amount they eat each day are basically in proportion?

No, a 60-year old doesn't eat six times that of a 10-year old.

26) Find one solution to: $x = 7, y = 4$ or $x = 14, y = 2$

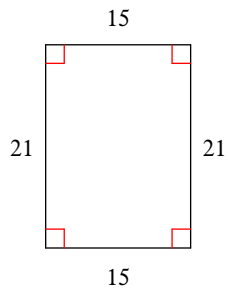
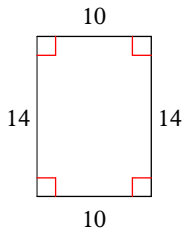
$$\frac{x}{4} = \frac{7}{y}$$

Similar Polygons

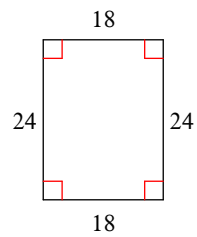
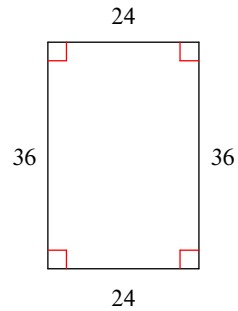
Date _____ Period _____

State if the polygons are similar.

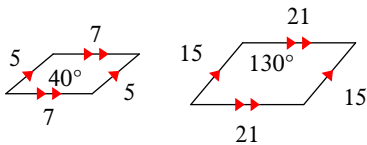
1)



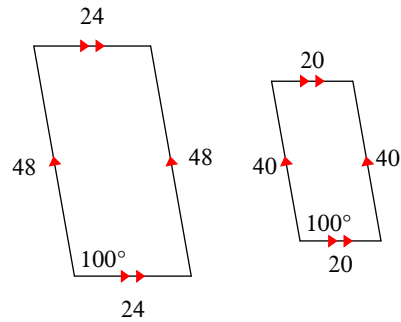
2)



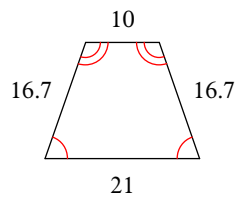
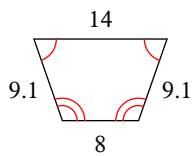
3)



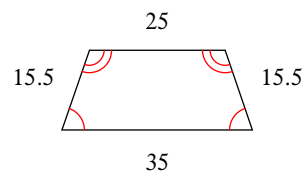
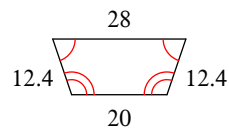
4)



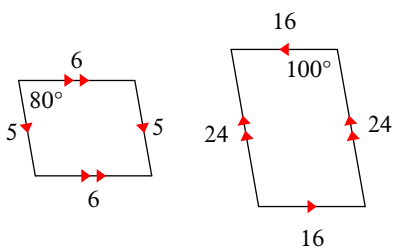
5)



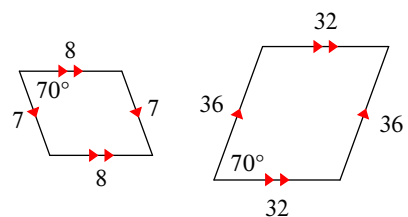
6)



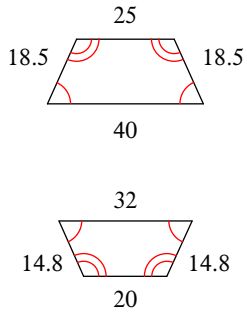
7)



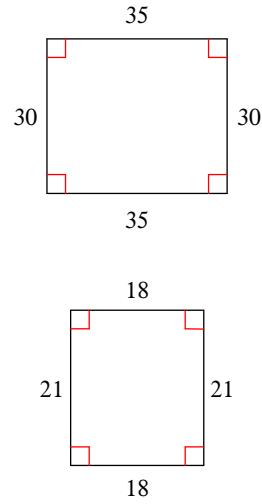
8)



9)

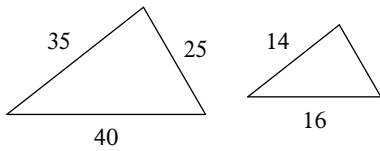


10)

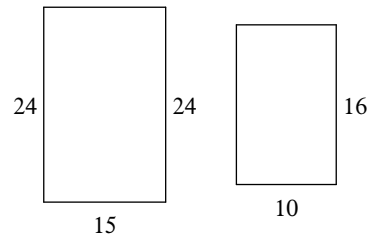


The polygons in each pair are similar. Find the scale factor of the smaller figure to the larger figure.

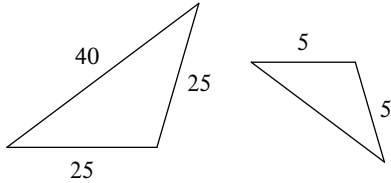
11)



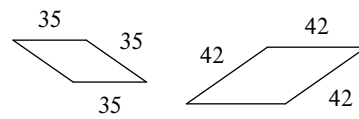
12)



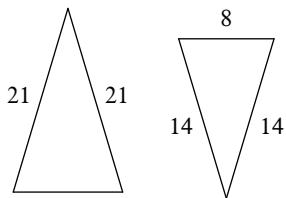
13)



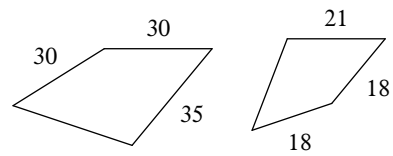
14)



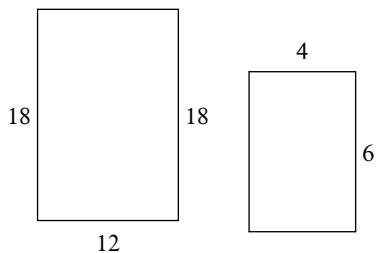
15)



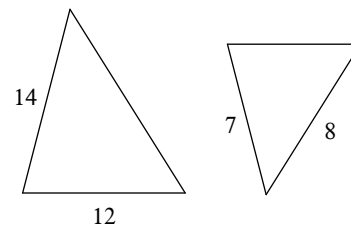
16)



17)



18)

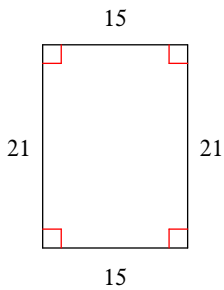
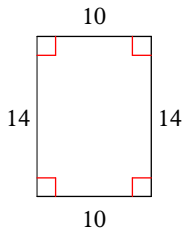


Similar Polygons

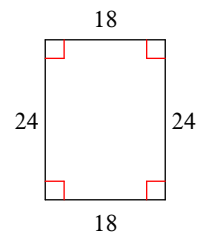
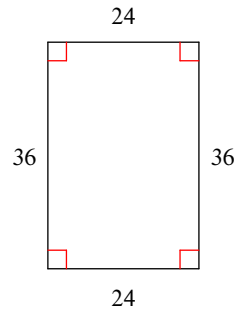
Date _____ Period _____

State if the polygons are similar.

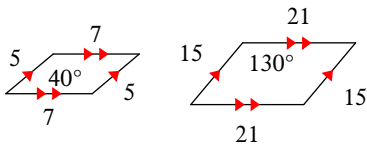
1) **similar**



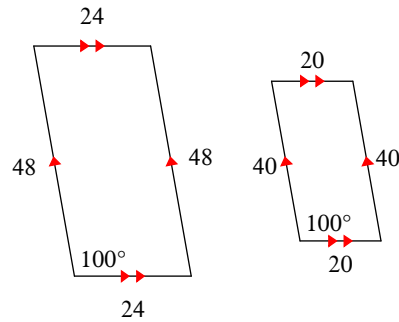
2) **not similar**



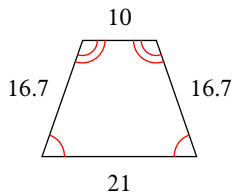
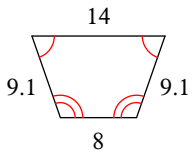
3) **not similar**



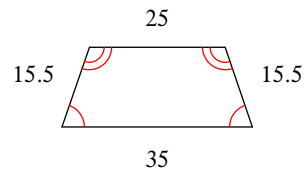
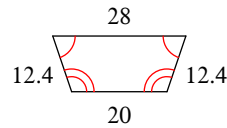
4) **similar**



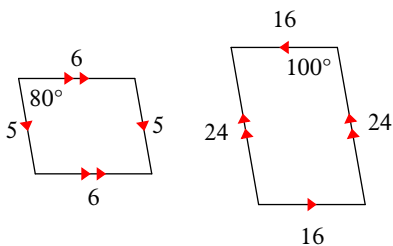
5) **not similar**



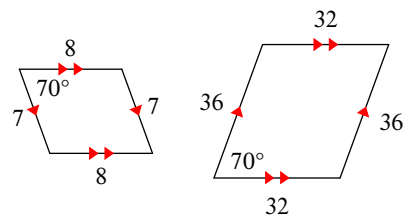
6) **similar**



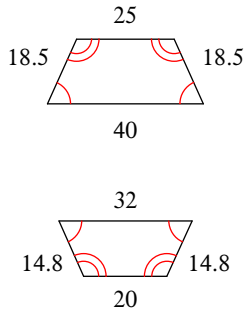
7) **not similar**



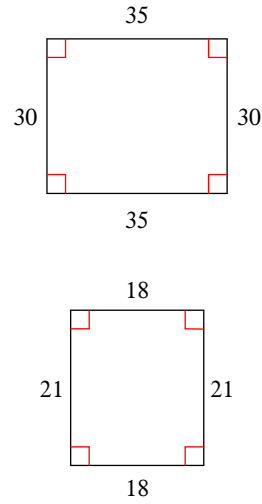
8) **not similar**



9) similar

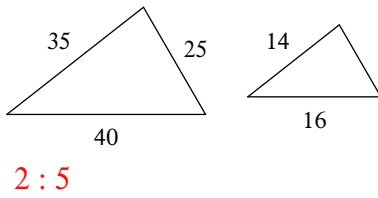


10) similar



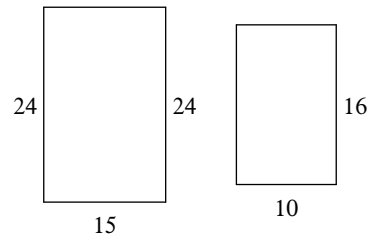
The polygons in each pair are similar. Find the scale factor of the smaller figure to the larger figure.

11)



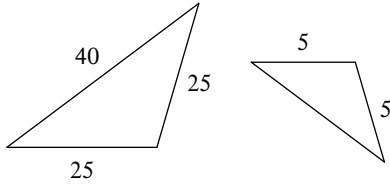
2 : 5

12)



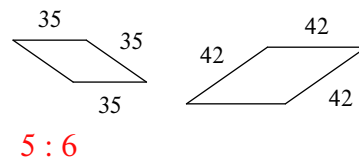
2 : 3

13)



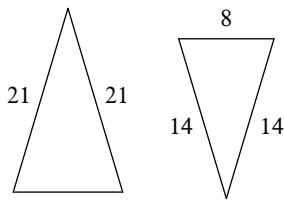
1 : 5

14)



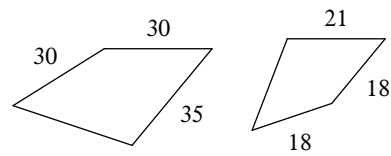
5 : 6

15)



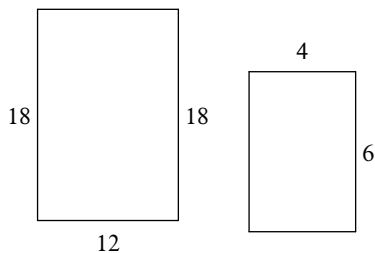
2 : 3

16)



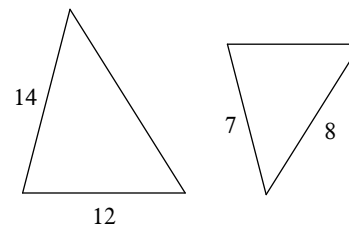
3 : 5

17)



1 : 3

18)



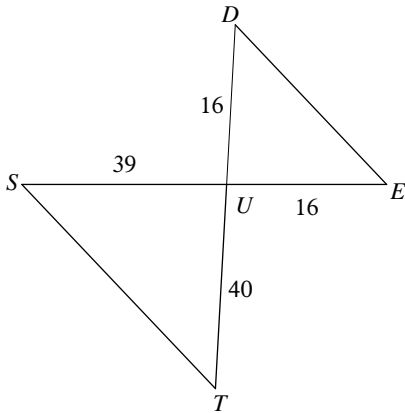
1 : 2

Similar Triangles

Date _____ Period _____

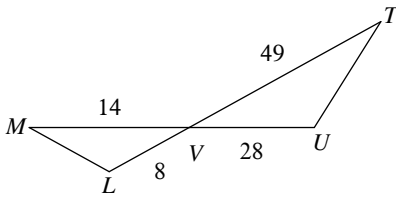
State if the triangles in each pair are similar. If so, state how you know they are similar and complete the similarity statement.

1)



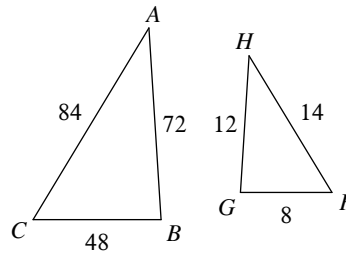
$\Delta UTS \sim$ _____

3)



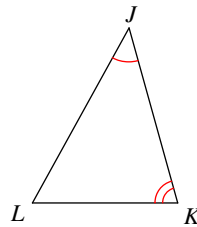
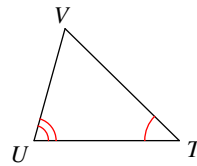
$\Delta VUT \sim$ _____

2)



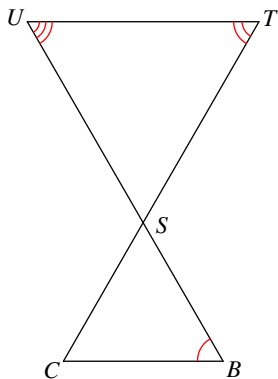
$\Delta CBA \sim$ _____

4)



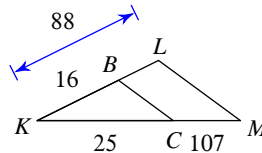
$\Delta JKL \sim$ _____

5)



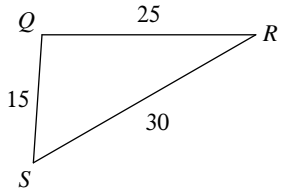
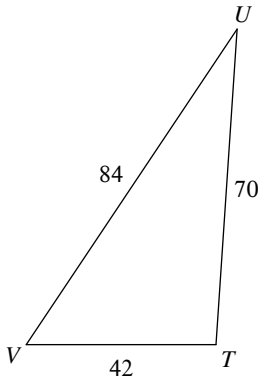
$\Delta STU \sim$ _____

6)



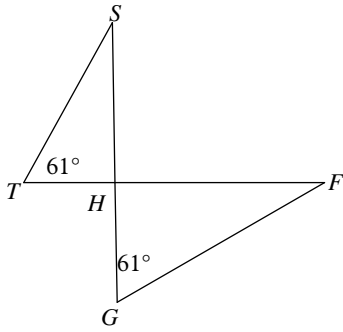
$\Delta KLM \sim$ _____

7)



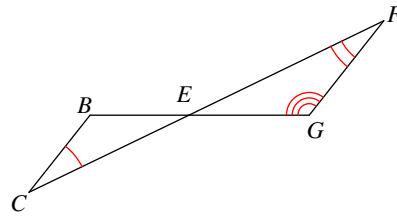
$\Delta TUV \sim$ _____

9)



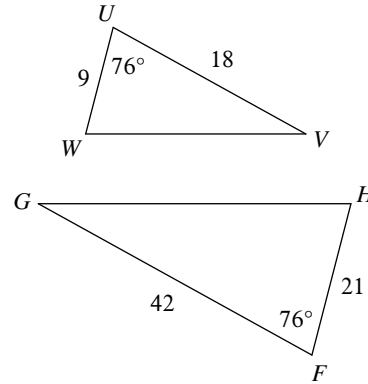
$\Delta HGF \sim$ _____

8)



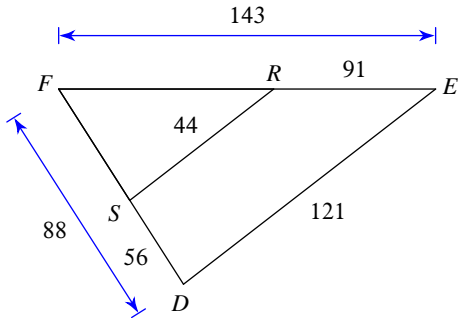
$\Delta EFG \sim$ _____

10)



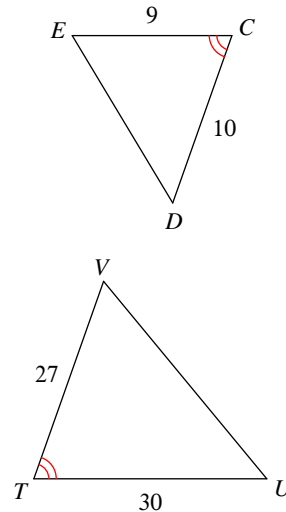
$\Delta FGH \sim$ _____

11)



$\Delta FED \sim$ _____

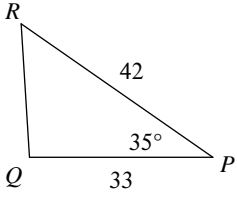
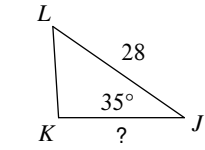
12)



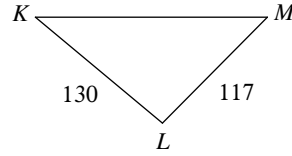
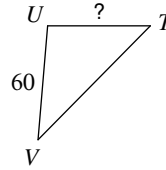
$\Delta TUV \sim$ _____

Find the missing length. The triangles in each pair are similar.

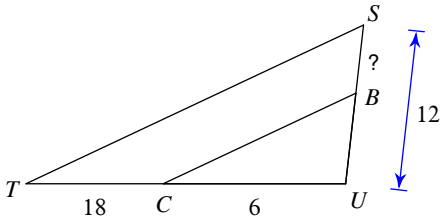
13)



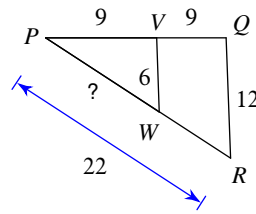
14)



15)

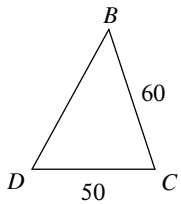
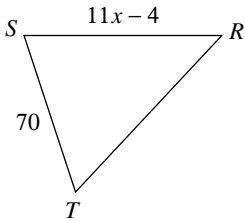


16)

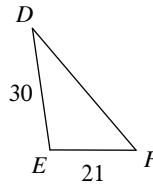
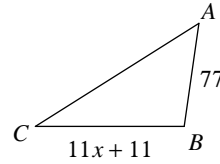


Solve for x . The triangles in each pair are similar.

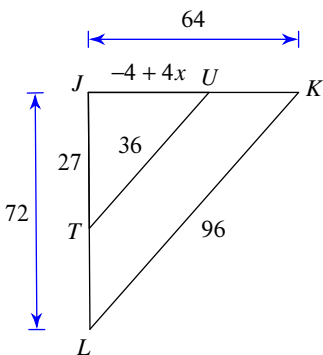
17)



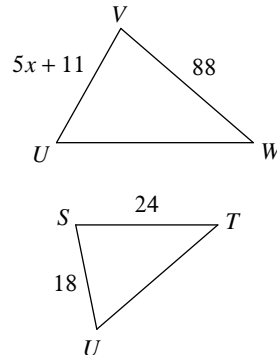
18)



19)



20)

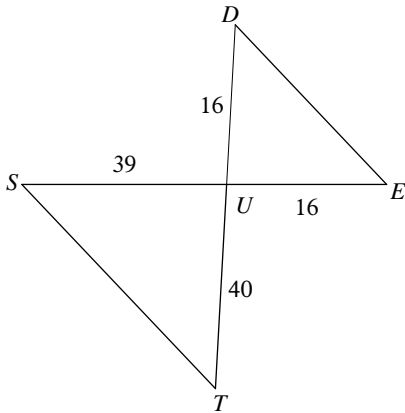


Similar Triangles

Date _____ Period _____

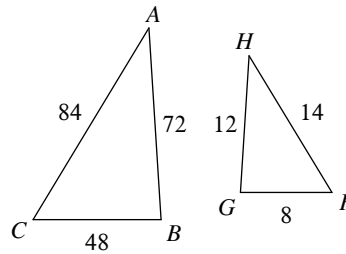
State if the triangles in each pair are similar. If so, state how you know they are similar and complete the similarity statement.

1) not similar



$\Delta UTS \sim$ _____

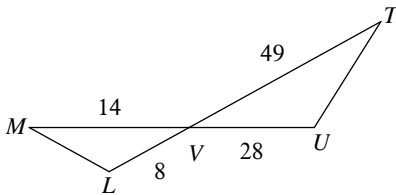
2)



$\Delta CBA \sim$ _____

similar; SSS similarity; ΔFGH

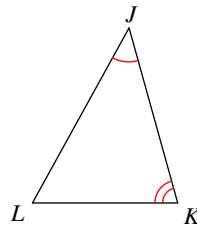
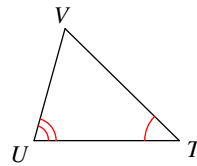
3)



$\Delta VUT \sim$ _____

similar; SAS similarity; ΔVLM

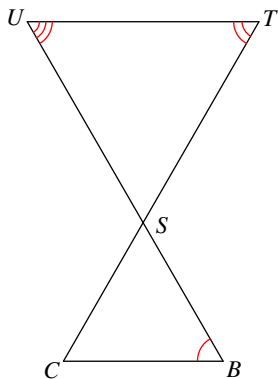
4)



$\Delta JKL \sim$ _____

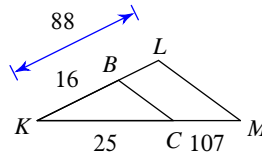
similar; AA similarity; ΔTUV

5) not similar



$\Delta STU \sim$ _____

6)

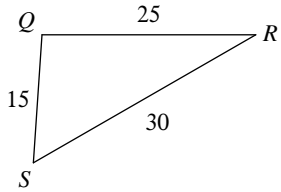
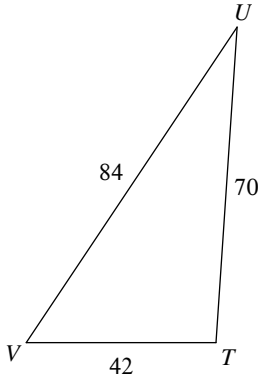


$\Delta KLM \sim$ _____

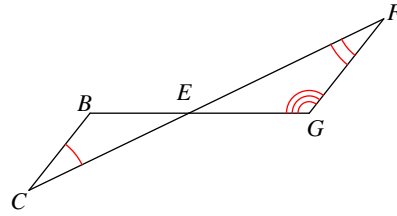
not similar

7)

similar; SSS similarity; ΔQRS)



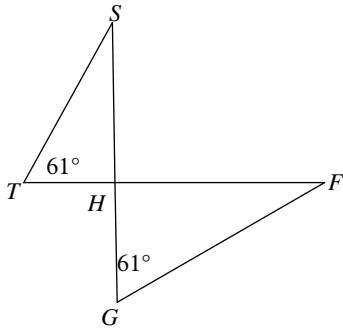
$\Delta TUV \sim$ _____



$\Delta EFG \sim$ _____

not similar

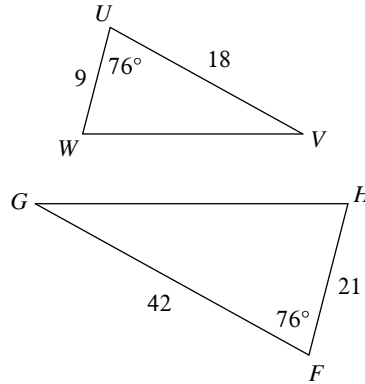
9)



$\Delta HGF \sim$ _____

similar; AA similarity; ΔHTS

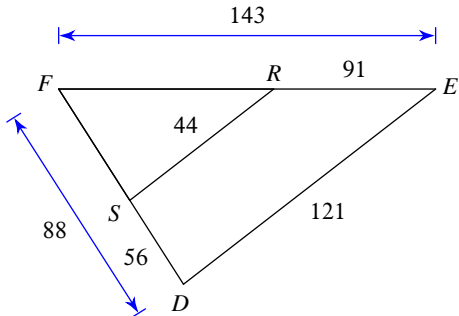
10)



$\Delta FGH \sim$ _____

similar; SAS similarity; ΔUVW

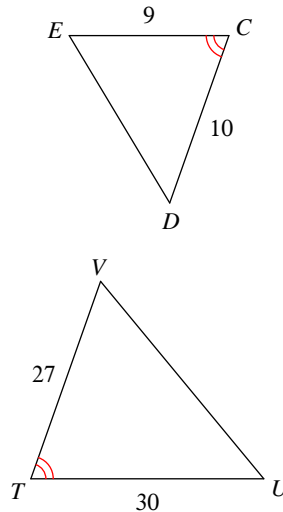
11)



$\Delta FED \sim$ _____

similar; SSS similarity; ΔFRS

12)

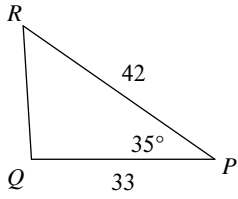
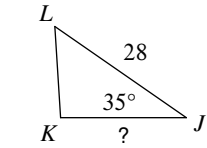


$\Delta TVU \sim$ _____

similar; SAS similarity; ΔCDE

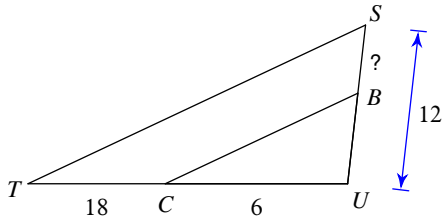
Find the missing length. The triangles in each pair are similar.

13)



22

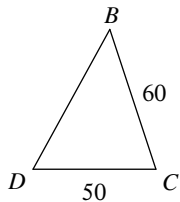
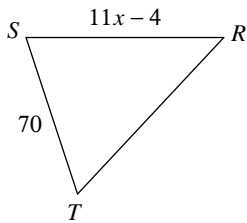
15)



9

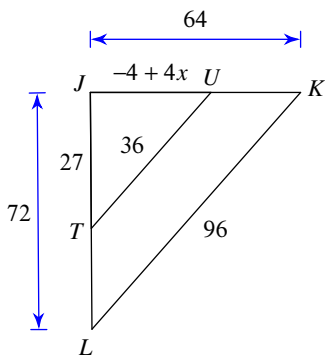
Solve for x . The triangles in each pair are similar.

17)



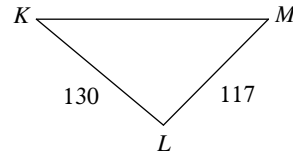
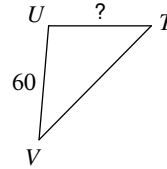
8

19)



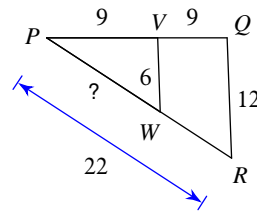
7

14)



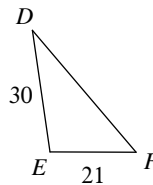
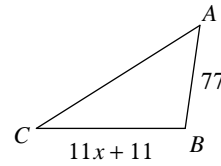
54

16)



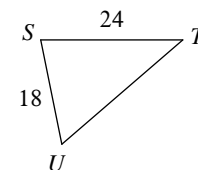
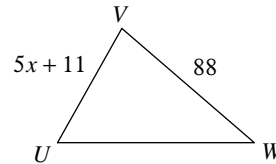
11

18)



9

20)



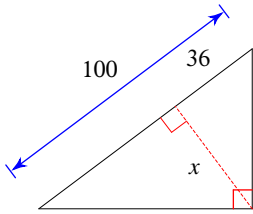
11

Similar Right Triangles

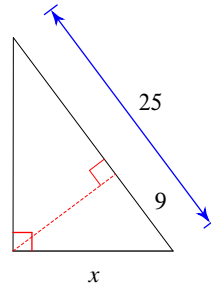
Date _____ Period _____

Find the missing length indicated. Leave your answer in simplest radical form.

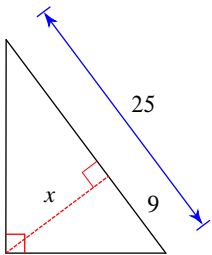
1)



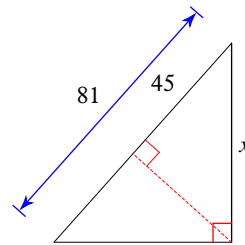
2)



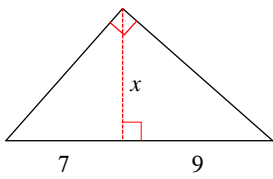
3)



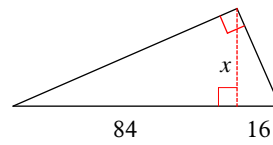
4)



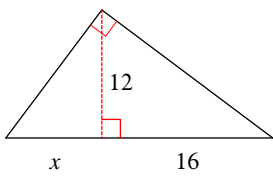
5)



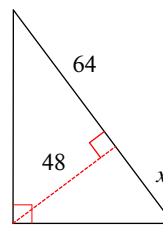
6)



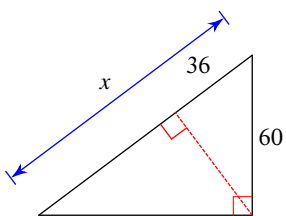
7)



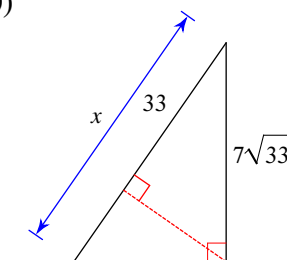
8)



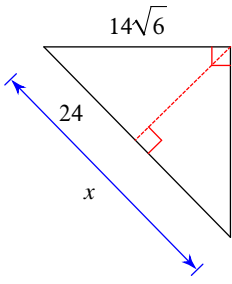
9)



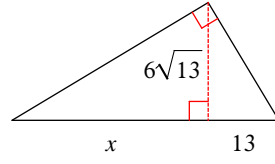
10)



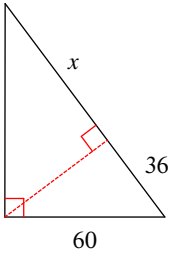
11)



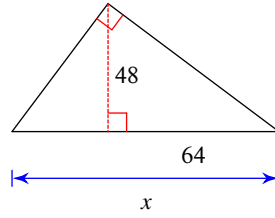
12)



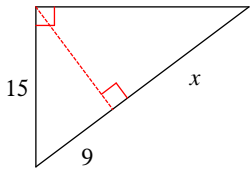
13)



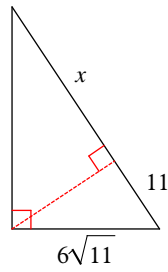
14)



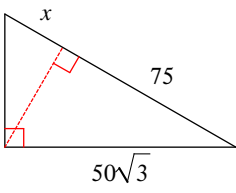
15)



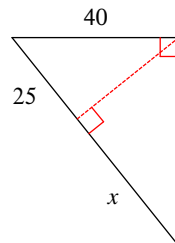
16)



17)



18)

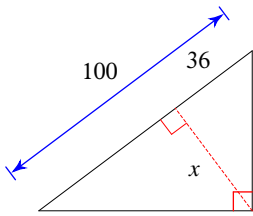


Similar Right Triangles

Date _____ Period _____

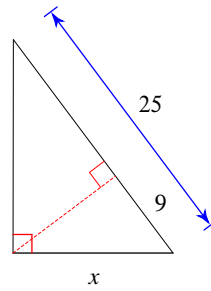
Find the missing length indicated. Leave your answer in simplest radical form.

1)



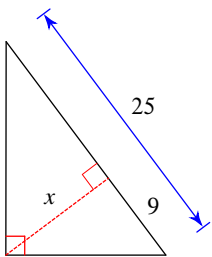
48

2)



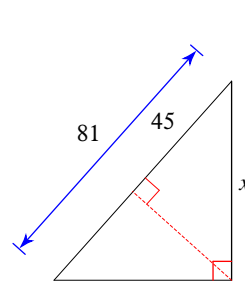
15

3)



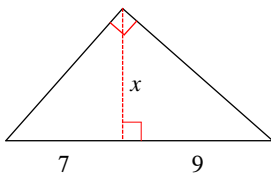
12

4)



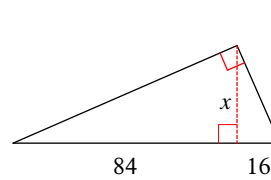
$27\sqrt{5}$

5)



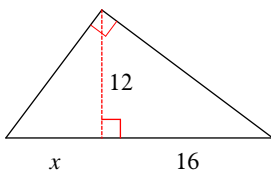
$3\sqrt{7}$

6)



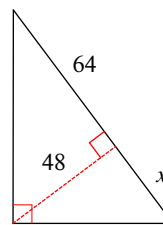
$8\sqrt{21}$

7)



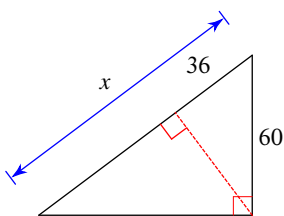
9

8)



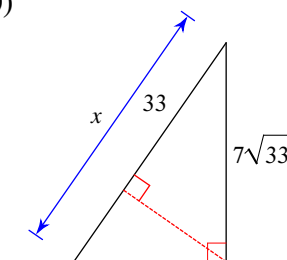
36

9)



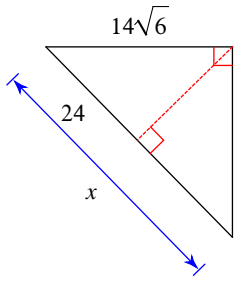
100

10)



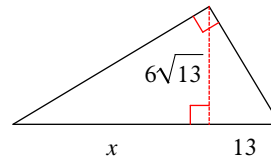
49

11)



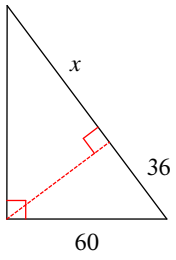
49

12)



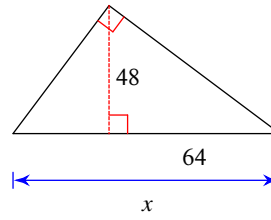
36

13)



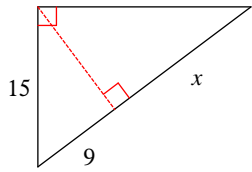
64

14)



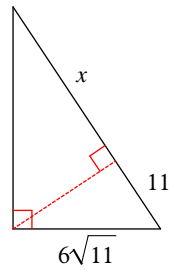
100

15)



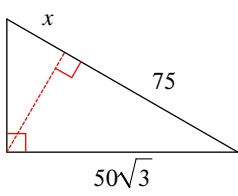
16

16)



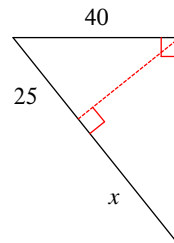
25

17)



25

18)



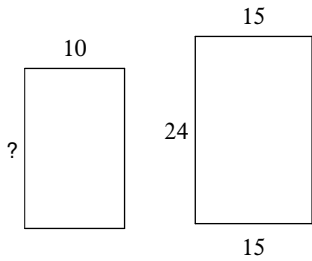
39

Using Similar Polygons

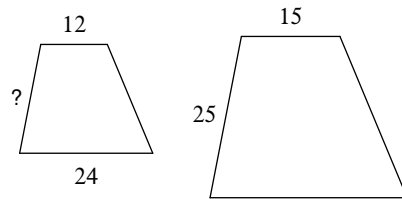
Date _____ Period _____

The polygons in each pair are similar. Find the missing side length.

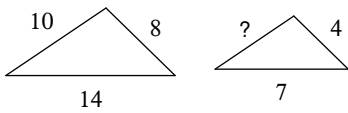
1)



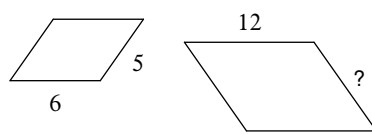
2)



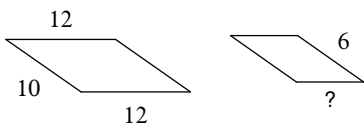
3)



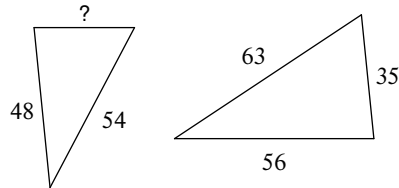
4)



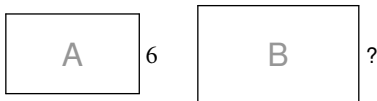
5)



6)

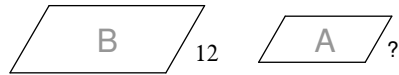


7)



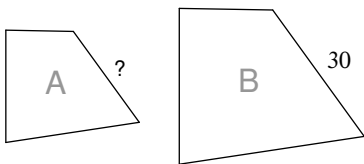
scale factor from A to B = 2 : 7

8)



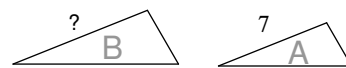
scale factor from A to B = 2 : 3

9)



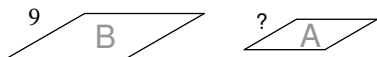
scale factor from A to B = 5 : 6

10)



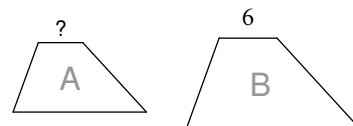
scale factor from A to B = 1 : 7

11)

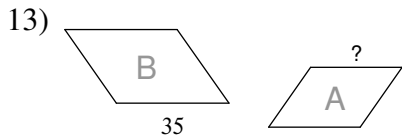


scale factor from A to B = 2 : 3

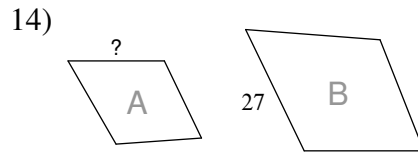
12)



scale factor from A to B = 1 : 2

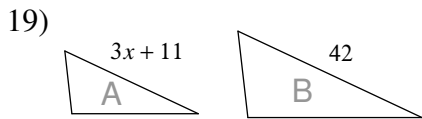
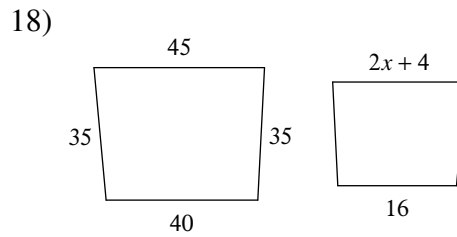
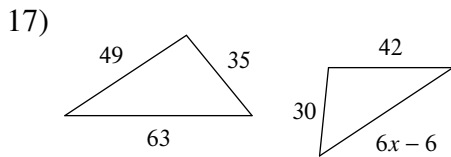
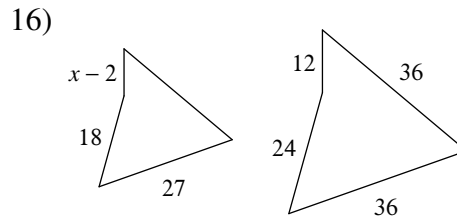
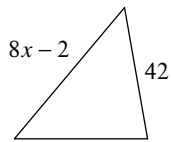
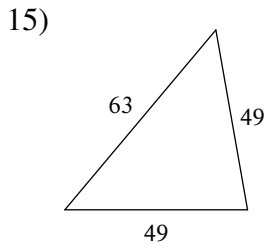


scale factor from A to B = 6 : 7

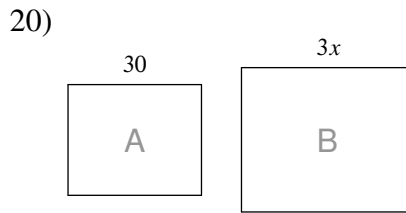


scale factor from A to B = 1 : 3

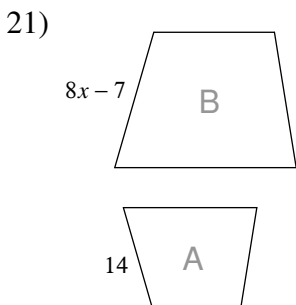
Solve for x . The polygons in each pair are similar.



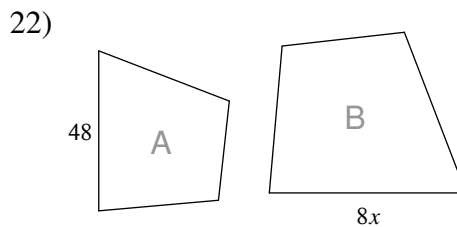
scale factor from A to B = 5 : 6



scale factor from A to B = 5 : 6



scale factor from A to B = 2 : 7



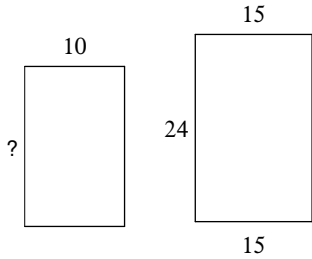
scale factor from A to B = 6 : 7

Using Similar Polygons

Date _____ Period _____

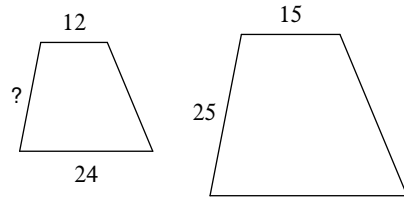
The polygons in each pair are similar. Find the missing side length.

1)



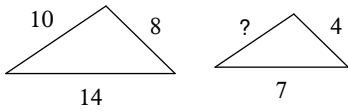
16

2)



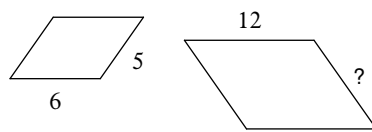
20

3)



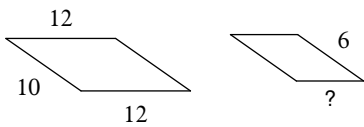
5

4)



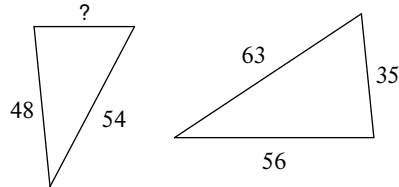
10

5)



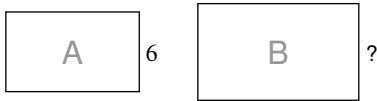
5

6)



30

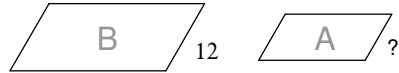
7)



scale factor from A to B = 2 : 7

21

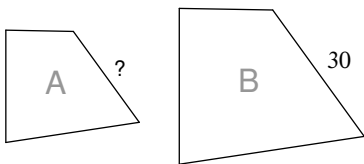
8)



scale factor from A to B = 2 : 3

8

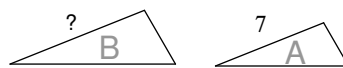
9)



scale factor from A to B = 5 : 6

25

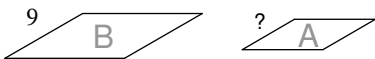
10)



scale factor from A to B = 1 : 7

49

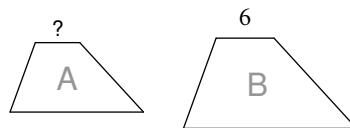
11)



scale factor from A to B = 2 : 3

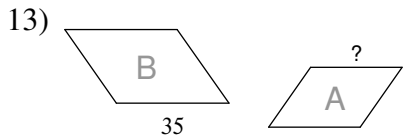
6

12)



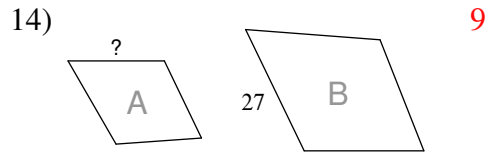
scale factor from A to B = 1 : 2

3



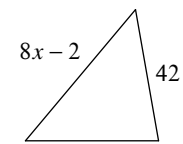
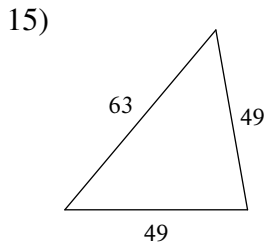
scale factor from A to B = 6 : 7

30

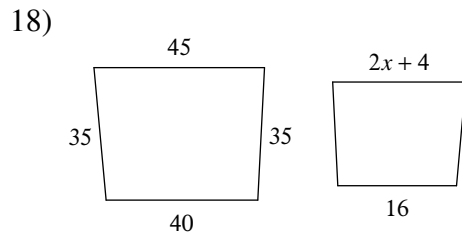
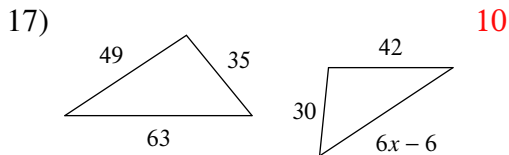
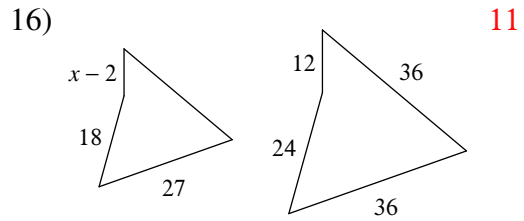


scale factor from A to B = 1 : 3

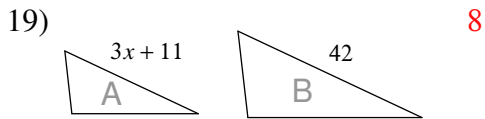
Solve for x . The polygons in each pair are similar.



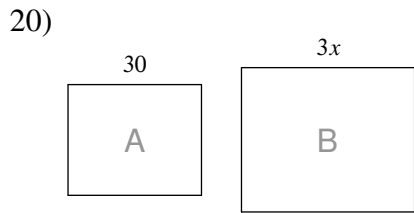
7



7

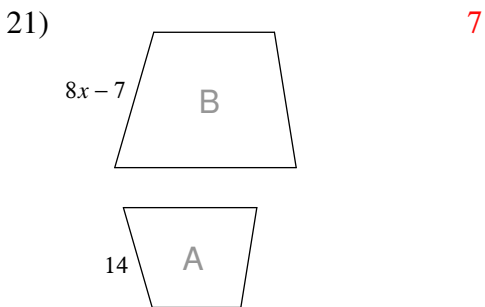


scale factor from A to B = 5 : 6

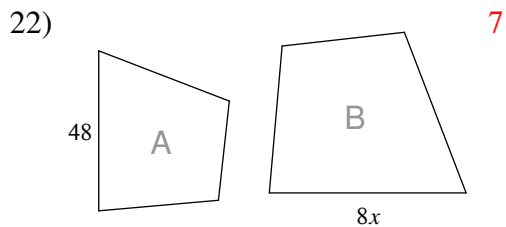


scale factor from A to B = 5 : 6

12



scale factor from A to B = 2 : 7

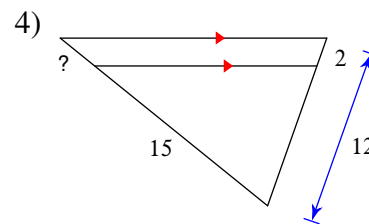
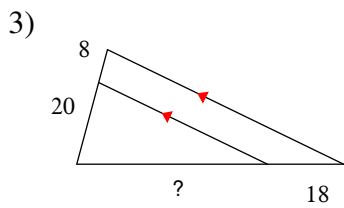
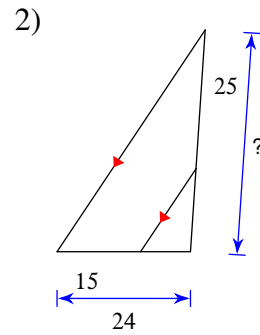
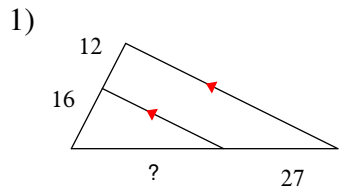


scale factor from A to B = 6 : 7

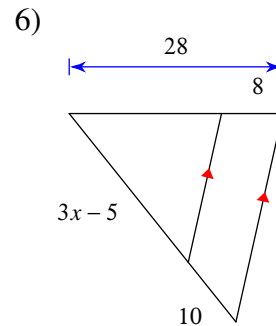
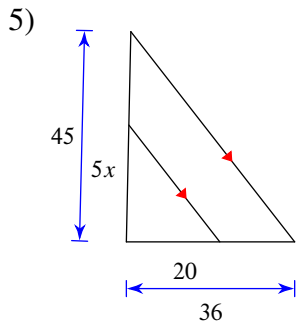
Proportional Parts in Triangles and Parallel Lines

Date _____ Period _____

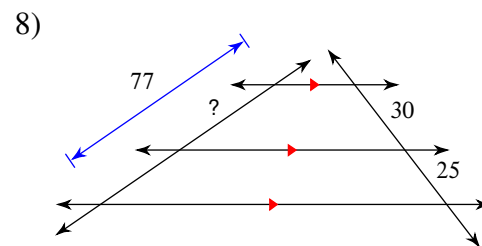
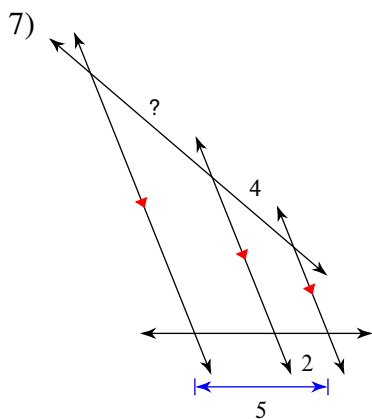
Find the missing length indicated.



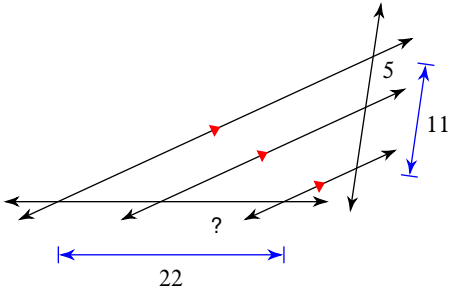
Solve for x .



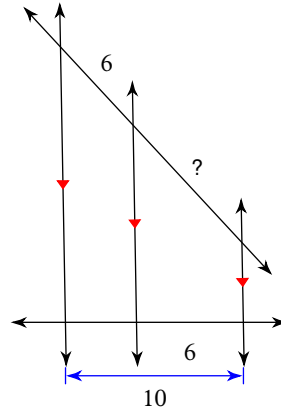
Find the missing length indicated.



9)

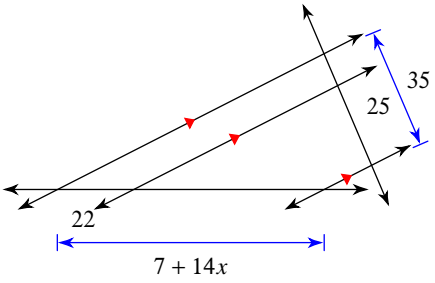


10)

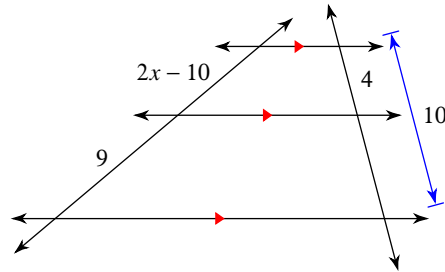


Solve for x .

11)

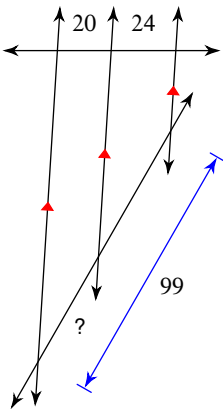


12)

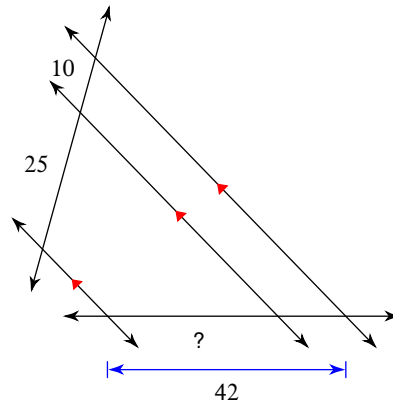


Find the missing length indicated.

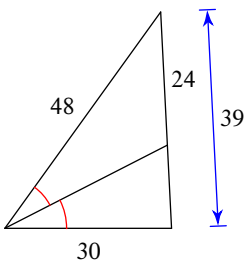
13)



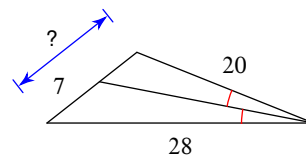
14)



15)

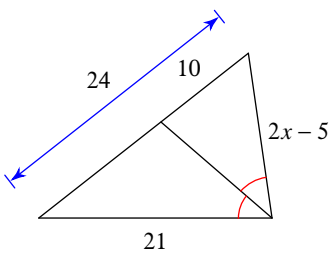


16)

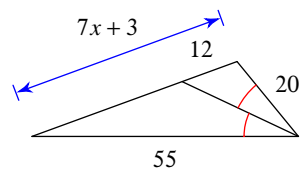


Solve for x .

17)



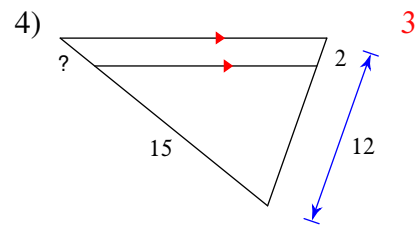
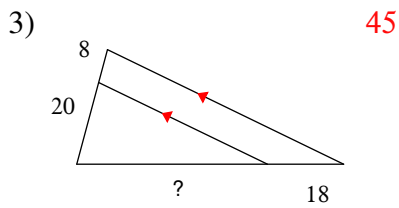
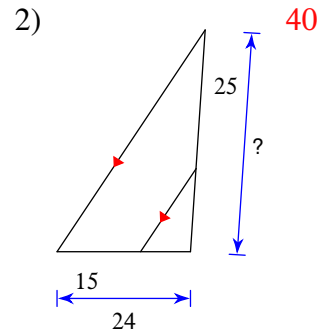
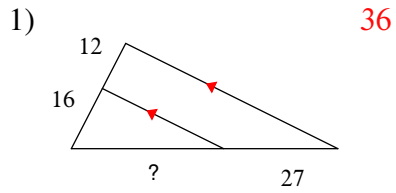
18)



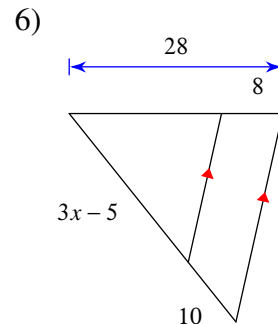
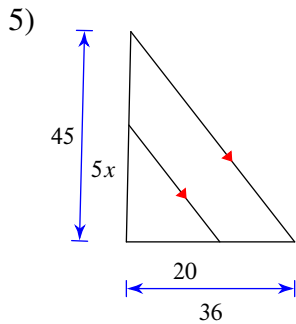
Proportional Parts in Triangles and Parallel Lines

Date _____ Period _____

Find the missing length indicated.



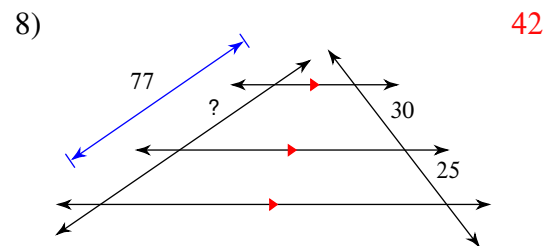
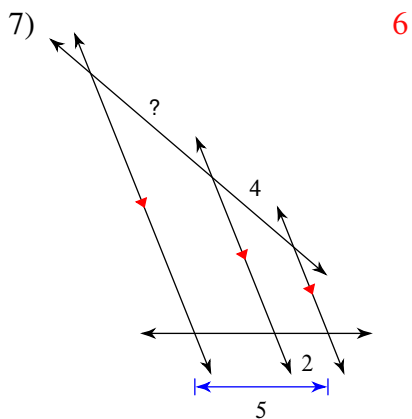
Solve for x .



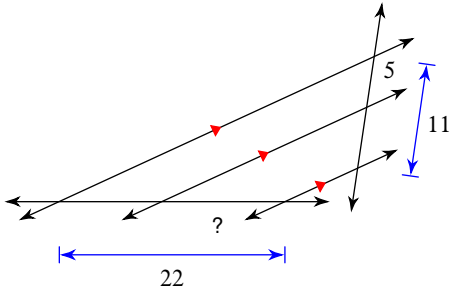
5

10

Find the missing length indicated.

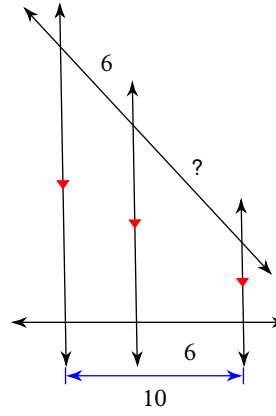


9)



12

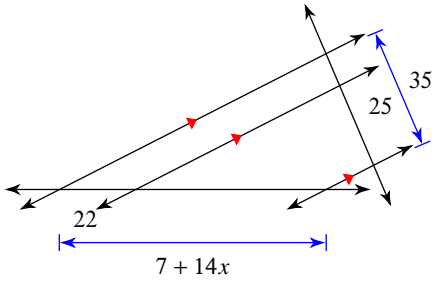
10)



9

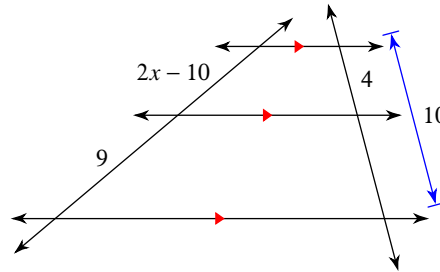
Solve for x .

11)



5

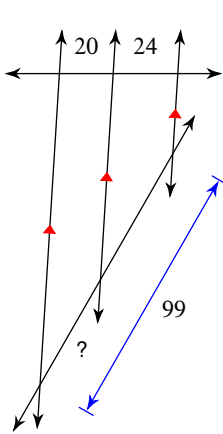
12)



8

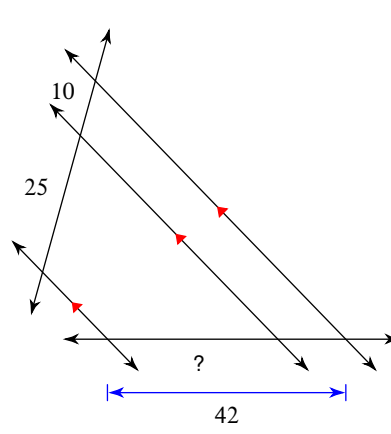
Find the missing length indicated.

13)



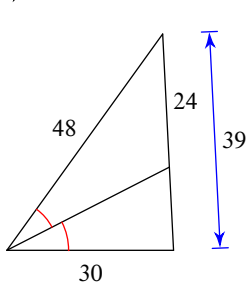
45

14)



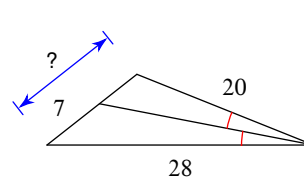
30

15)



15

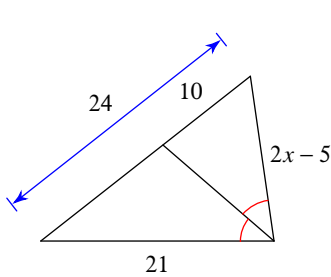
16)



12

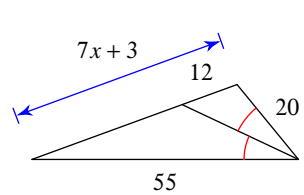
Solve for x .

17)



10

18)



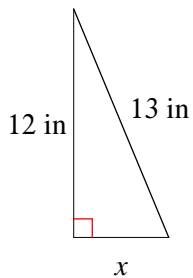
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The Pythagorean Theorem and Its Converse

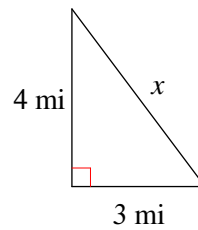
Date _____ Period _____

Find the missing side of each triangle. Round your answers to the nearest tenth if necessary.

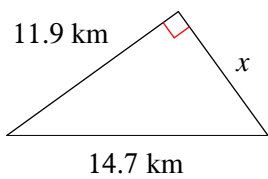
1)



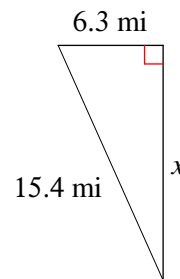
2)



3)

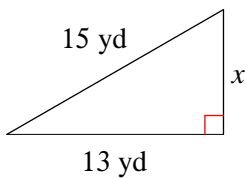


4)

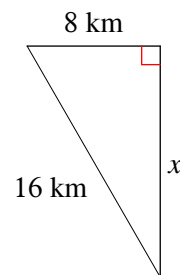


Find the missing side of each triangle. Leave your answers in simplest radical form.

5)



6)



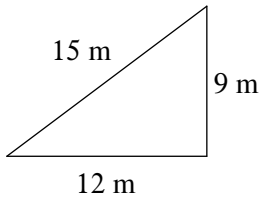
Find the missing side of each right triangle. Side c is the hypotenuse. Sides a and b are the legs. Leave your answers in simplest radical form.

7) $a = 11$ m, $c = 15$ m

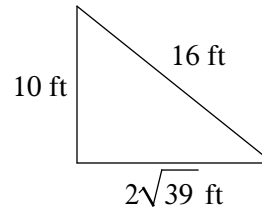
8) $b = \sqrt{6}$ yd, $c = 4$ yd

State if each triangle is a right triangle.

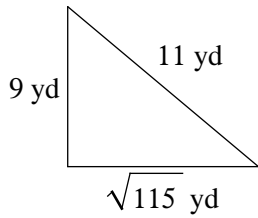
9)



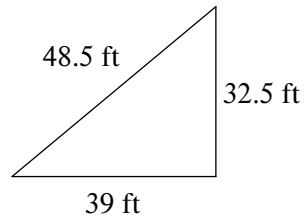
10)



11)



12)



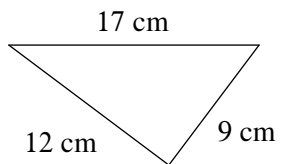
State if the three sides lengths form a right triangle.

13) 10 cm, 49.5 cm, 50.5 cm

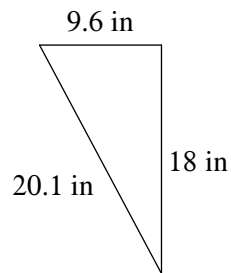
14) 9 in, 12 in, 15 in

State if each triangle is acute, obtuse, or right.

15)



16)



State if the three side lengths form an acute, obtuse, or right triangle.

17) 6 mi, $2\sqrt{55}$ mi, 17 mi

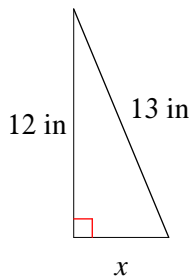
18) 4.8 km, 28.6 km, 29 km

The Pythagorean Theorem and Its Converse

Date _____ Period _____

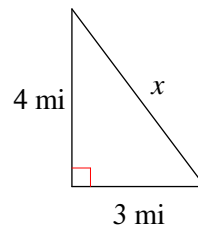
Find the missing side of each triangle. Round your answers to the nearest tenth if necessary.

1)



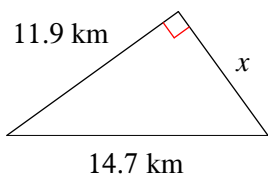
5 in

2)



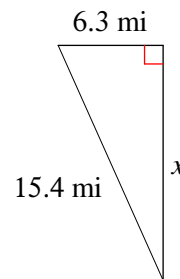
5 mi

3)



8.6 km

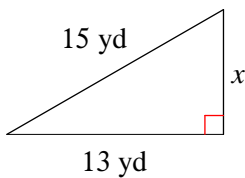
4)



14.1 mi

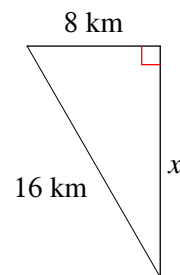
Find the missing side of each triangle. Leave your answers in simplest radical form.

5)



$2\sqrt{14}$ yd

6)



$8\sqrt{3}$ km

Find the missing side of each right triangle. Side c is the hypotenuse. Sides a and b are the legs. Leave your answers in simplest radical form.

7) $a = 11$ m, $c = 15$ m

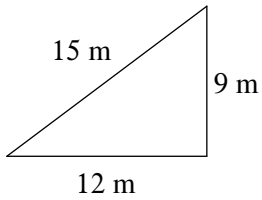
$2\sqrt{26}$ m

8) $b = \sqrt{6}$ yd, $c = 4$ yd

$\sqrt{10}$ yd

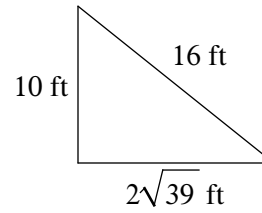
State if each triangle is a right triangle.

9)



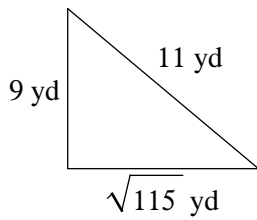
Yes

10)



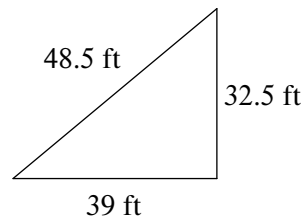
Yes

11)



No

12)



No

State if the three sides lengths form a right triangle.

13) 10 cm, 49.5 cm, 50.5 cm

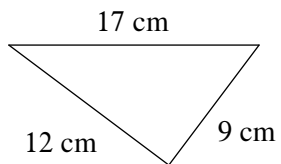
Yes

14) 9 in, 12 in, 15 in

Yes

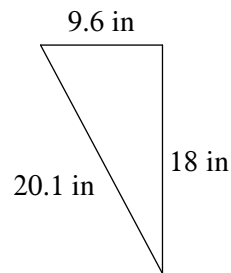
State if each triangle is acute, obtuse, or right.

15)



Obtuse

16)



Acute

State if the three side lengths form an acute, obtuse, or right triangle.

17) 6 mi, $2\sqrt{55}$ mi, 17 mi

Obtuse

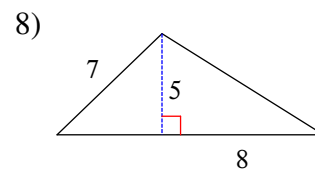
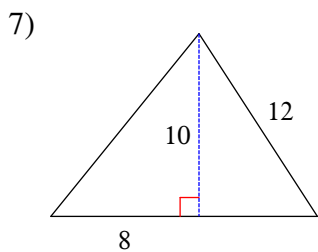
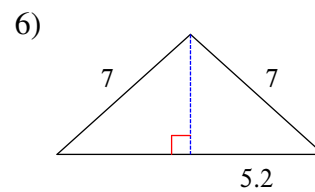
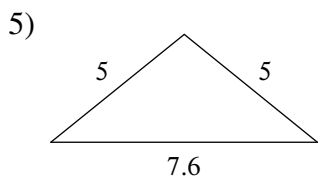
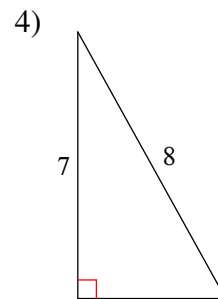
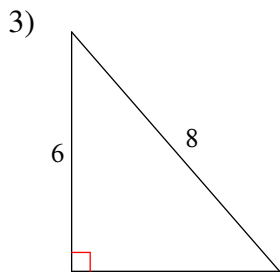
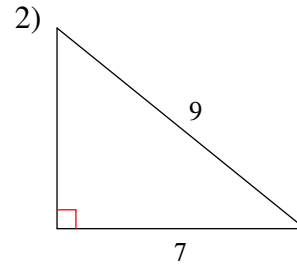
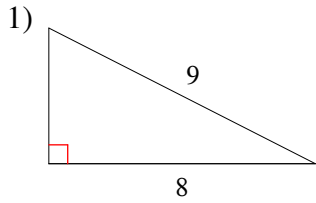
18) 4.8 km, 28.6 km, 29 km

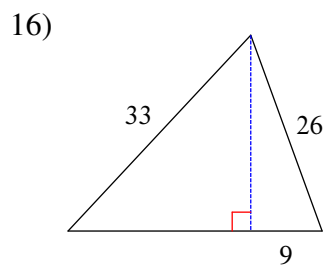
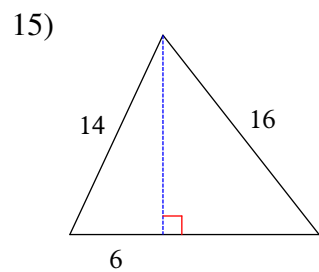
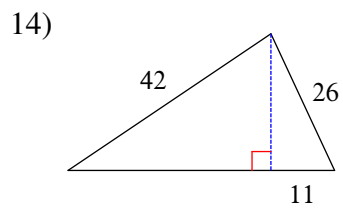
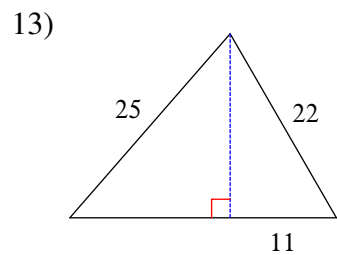
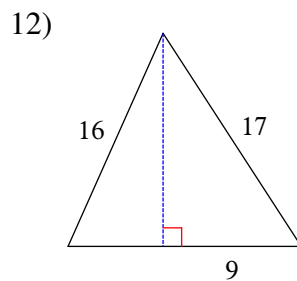
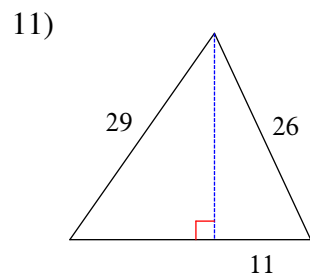
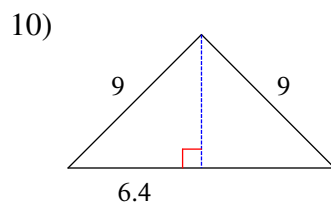
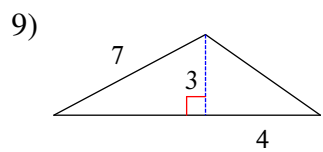
Right

Multi-Step Pythagorean Theorem Problems

Date _____ Period _____

Find the area of each triangle. Round intermediate values to the nearest tenth. Use the rounded values to calculate the next value. Round your final answer to the nearest tenth.

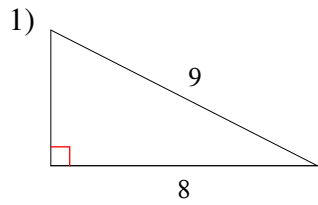




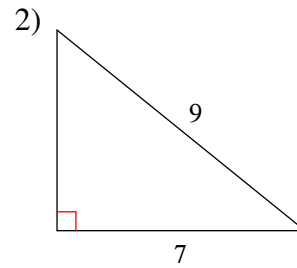
Multi-Step Pythagorean Theorem Problems

Date _____ Period _____

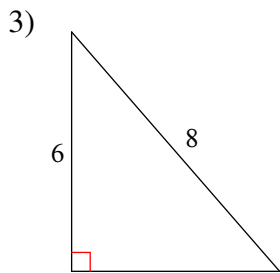
Find the area of each triangle. Round intermediate values to the nearest tenth. Use the rounded values to calculate the next value. Round your final answer to the nearest tenth.



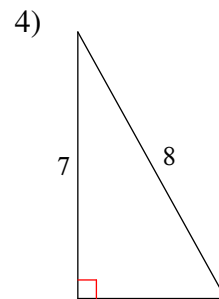
16.4



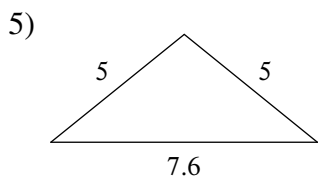
20



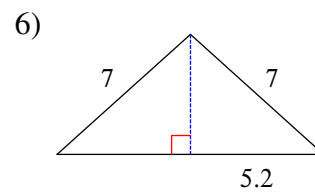
15.9



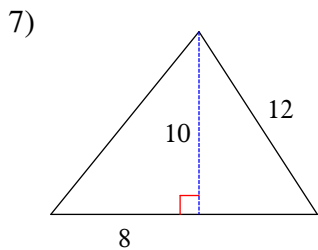
13.7



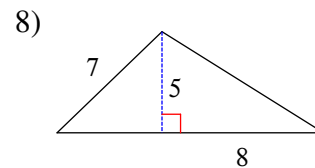
12.2



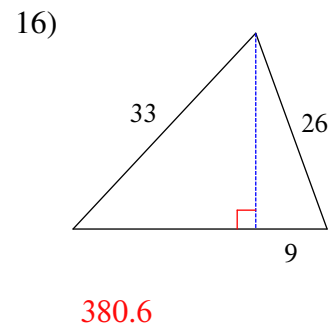
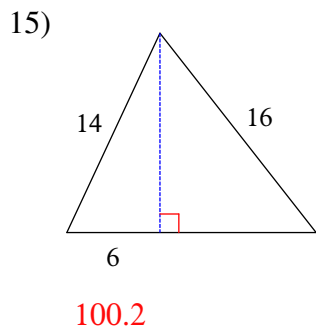
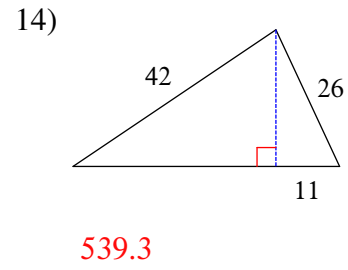
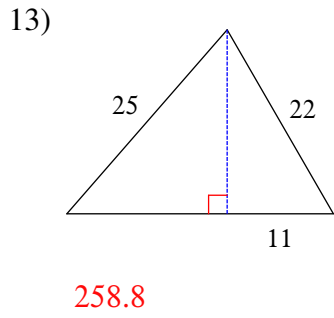
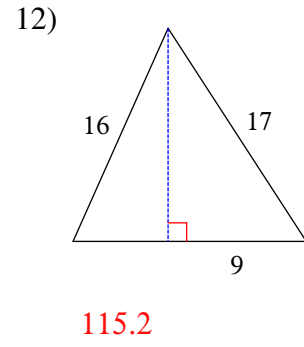
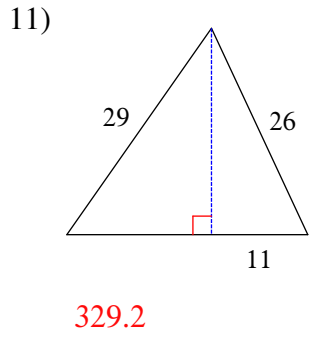
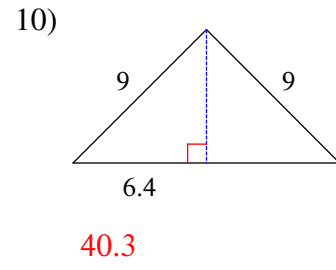
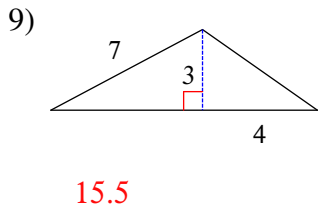
24.4



73



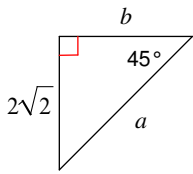
32.3



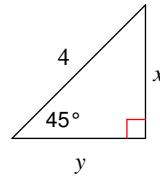
Special Right Triangles

Find the missing side lengths. Leave your answers as radicals in simplest form.

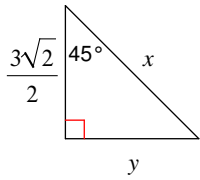
1)



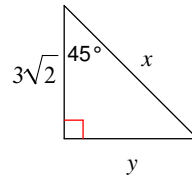
2)



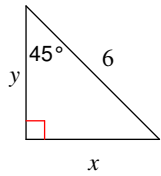
3)



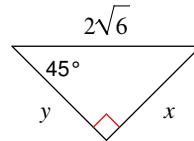
4)



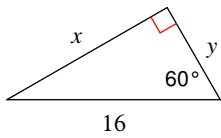
5)



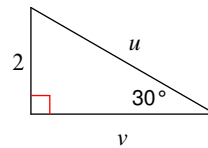
6)



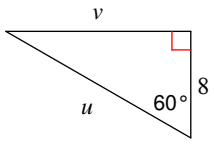
7)



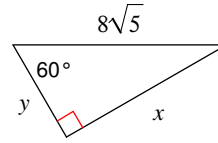
8)



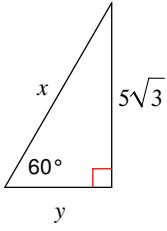
9)



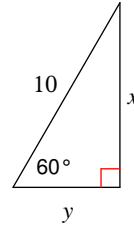
10)



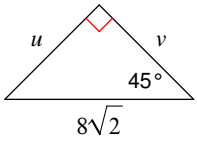
11)



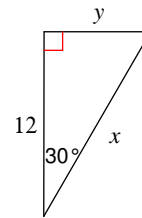
12)



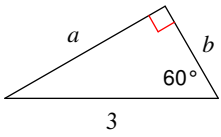
13)



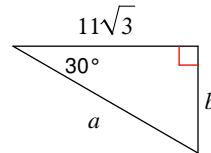
14)



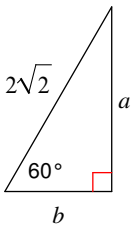
15)



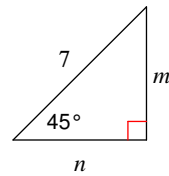
16)



17)



18)

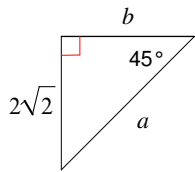


Special Right Triangles

Date _____ Period _____

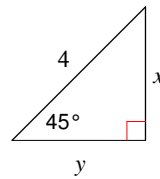
Find the missing side lengths. Leave your answers as radicals in simplest form.

1)



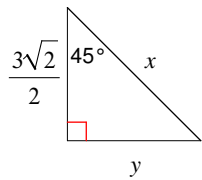
$$a = 4, b = 2\sqrt{2}$$

2)



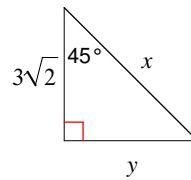
$$x = 2\sqrt{2}, y = 2\sqrt{2}$$

3)



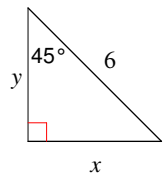
$$x = 3, y = \frac{3\sqrt{2}}{2}$$

4)



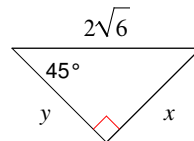
$$x = 6, y = 3\sqrt{2}$$

5)



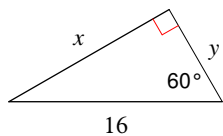
$$x = 3\sqrt{2}, y = 3\sqrt{2}$$

6)



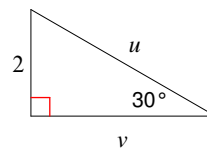
$$x = 2\sqrt{3}, y = 2\sqrt{3}$$

7)



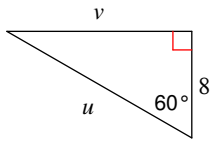
$$x = 8\sqrt{3}, y = 8$$

8)



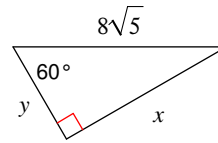
$$u = 4, v = 2\sqrt{3}$$

9)



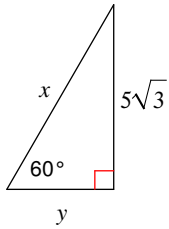
$$u = 16, v = 8\sqrt{3}$$

10)



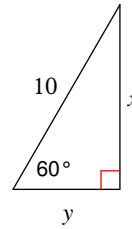
$$x = 4\sqrt{15}, y = 4\sqrt{5}$$

11)



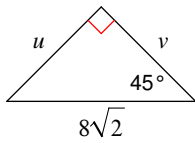
$$x = 10, y = 5$$

12)



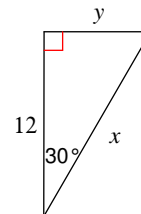
$$x = 5\sqrt{3}, y = 5$$

13)



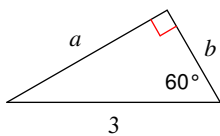
$$u = 8, v = 8$$

14)



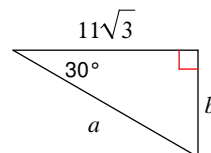
$$x = 8\sqrt{3}, y = 4\sqrt{3}$$

15)



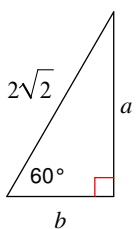
$$a = \frac{3\sqrt{3}}{2}, b = \frac{3}{2}$$

16)



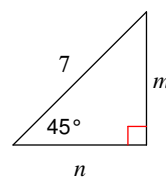
$$a = 22, b = 11$$

17)



$$a = \sqrt{6}, b = \sqrt{2}$$

18)

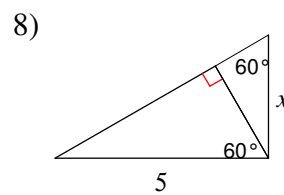
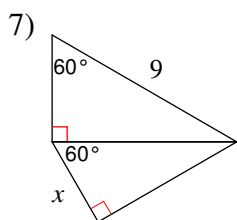
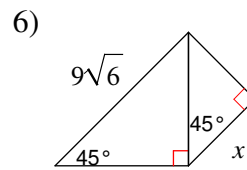
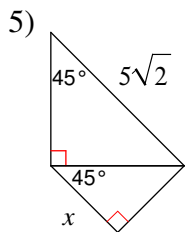
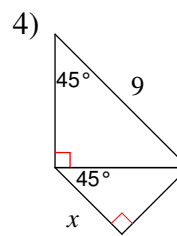
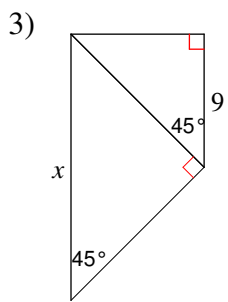
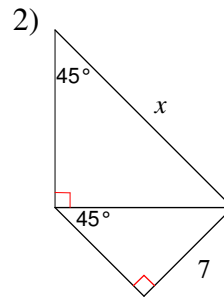
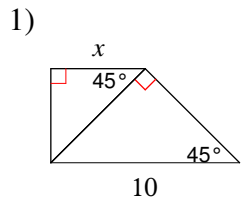


$$m = \frac{7\sqrt{2}}{2}, n = \frac{7\sqrt{2}}{2}$$

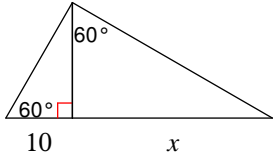
Multi-Step Special Right Triangles

Date _____ Period _____

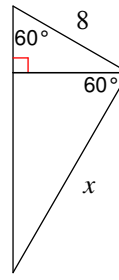
Find the missing side lengths. Leave your answers as radicals in simplest form.



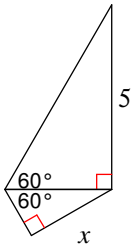
9)



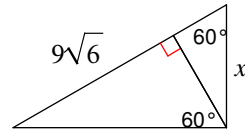
10)



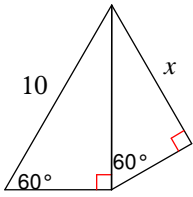
11)



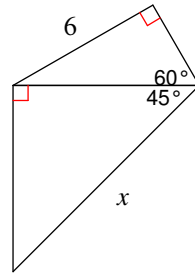
12)



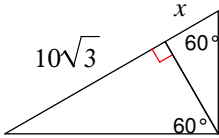
13)



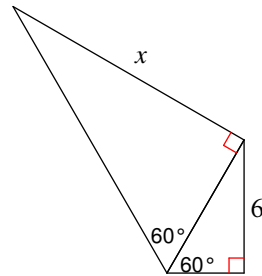
14)



15)



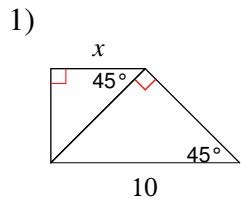
16)



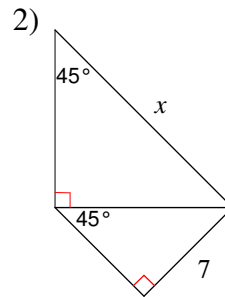
Multi-Step Special Right Triangles

Date _____ Period _____

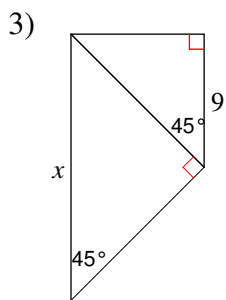
Find the missing side lengths. Leave your answers as radicals in simplest form.



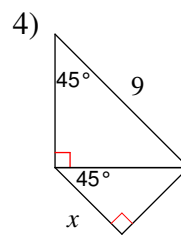
5



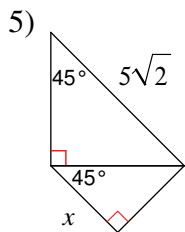
14



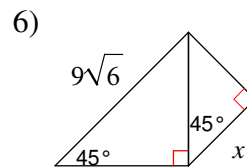
18



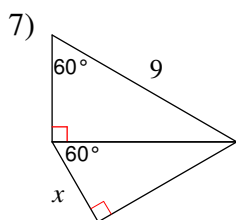
$\frac{9}{2}$



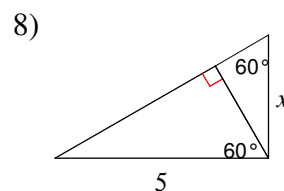
$\frac{5\sqrt{2}}{2}$



$\frac{9\sqrt{6}}{2}$

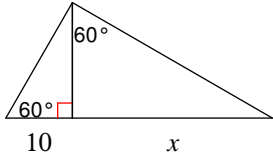


$\frac{9\sqrt{3}}{4}$



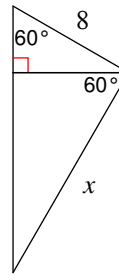
$\frac{5\sqrt{3}}{3}$

9)



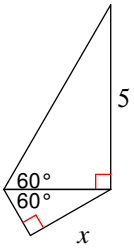
30

10)



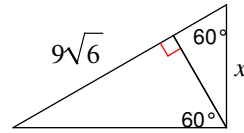
$8\sqrt{3}$

11)



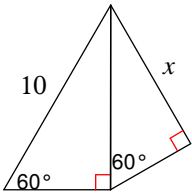
$\frac{5}{2}$

12)



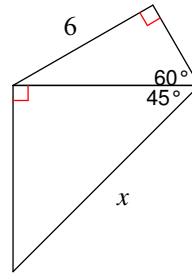
$6\sqrt{6}$

13)



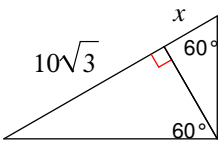
$\frac{15}{2}$

14)



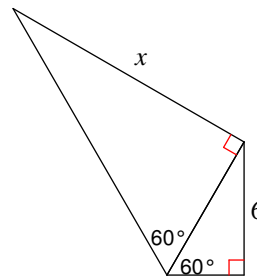
$4\sqrt{6}$

15)



$\frac{10\sqrt{3}}{3}$

16)



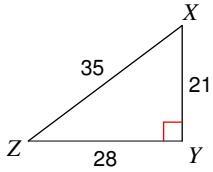
12

Trigonometric Ratios

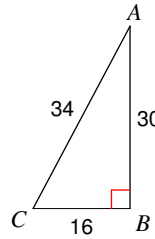
Date _____ Period _____

Find the value of each trigonometric ratio.

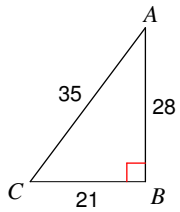
1) $\tan Z$



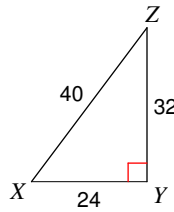
2) $\cos C$



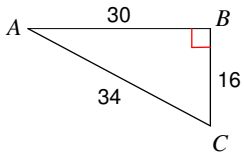
3) $\sin C$



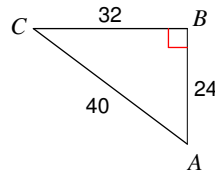
4) $\tan X$



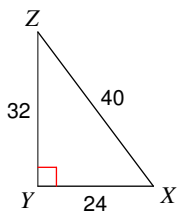
5) $\cos A$



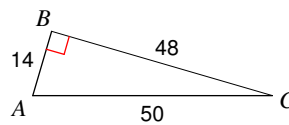
6) $\sin A$



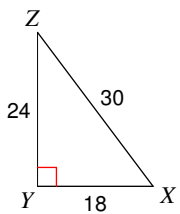
7) $\sin Z$



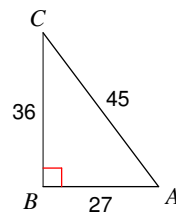
8) $\sin C$



9) $\cos Z$

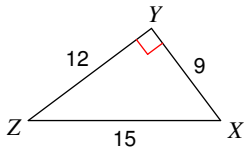


10) $\tan C$

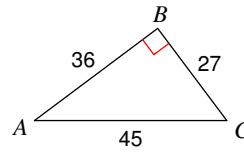


Find the value of each trigonometric ratio to the nearest ten-thousandth.

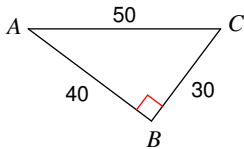
11) $\cos Z$



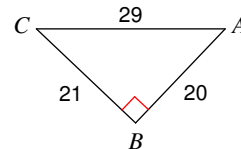
12) $\cos C$



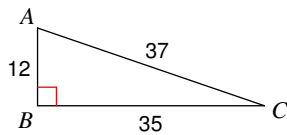
13) $\tan C$



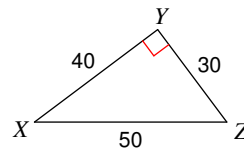
14) $\tan A$



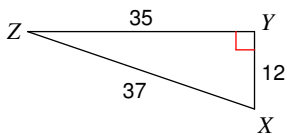
15) $\tan C$



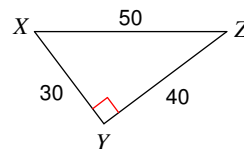
16) $\tan X$



17) $\sin Z$



18) $\sin Z$



19) $\sin 48^\circ$

20) $\sin 38^\circ$

21) $\cos 61^\circ$

22) $\cos 51^\circ$

Critical thinking questions:

23) Can the sine of an angle ever equal 2?
Why or why not?

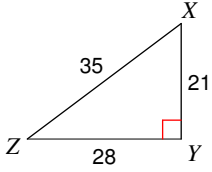
24) $\sin x = \frac{1}{3}$
Find $\cos x$.

Trigonometric Ratios

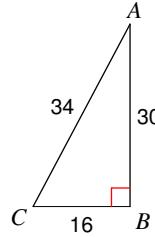
Date _____ Period _____

Find the value of each trigonometric ratio.

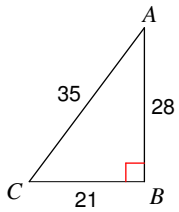
1) $\tan Z$ $\frac{3}{4}$



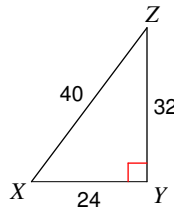
2) $\cos C$ $\frac{8}{17}$



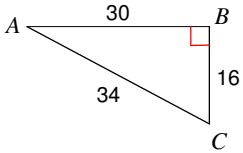
3) $\sin C$ $\frac{4}{5}$



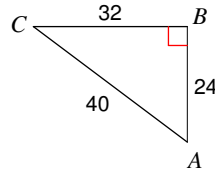
4) $\tan X$ $\frac{4}{3}$



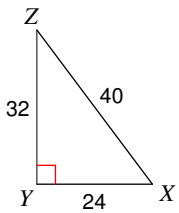
5) $\cos A$ $\frac{15}{17}$



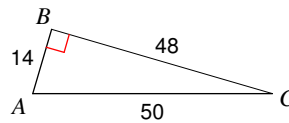
6) $\sin A$ $\frac{4}{5}$



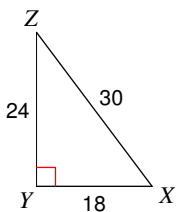
7) $\sin Z$ $\frac{3}{5}$



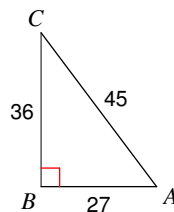
8) $\sin C$ $\frac{7}{25}$



9) $\cos Z$ $\frac{4}{5}$

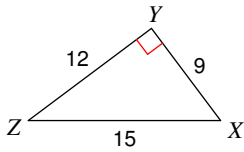


10) $\tan C$ $\frac{3}{4}$



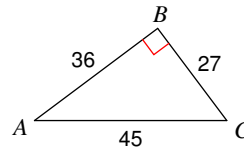
Find the value of each trigonometric ratio to the nearest ten-thousandth.

11) $\cos Z$



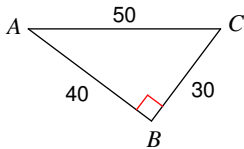
0.8000

12) $\cos C$



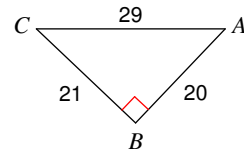
0.6000

13) $\tan C$



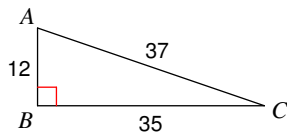
1.3333

14) $\tan A$



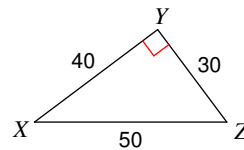
1.0500

15) $\tan C$



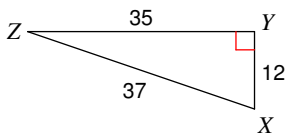
0.3429

16) $\tan X$



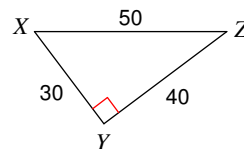
0.7500

17) $\sin Z$



0.3243

18) $\sin Z$



0.6000

19) $\sin 48^\circ$

0.7431

20) $\sin 38^\circ$

0.6157

21) $\cos 61^\circ$

0.4848

22) $\cos 51^\circ$

0.6293

Critical thinking questions:

23) Can the sine of an angle ever equal 2?
Why or why not?

No, the hypotenuse > opposite side.

24) $\sin x = \frac{1}{3} \frac{2\sqrt{2}}{3}$

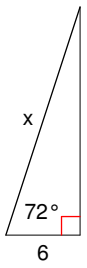
Find $\cos x$.

Solving Right Triangles

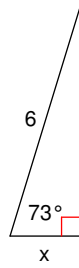
Date _____ Period _____

Find the missing side. Round to the nearest tenth.

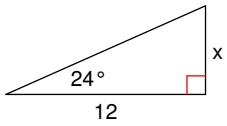
1)



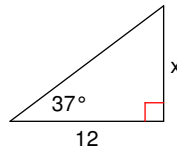
2)



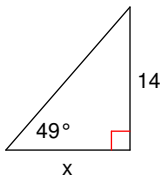
3)



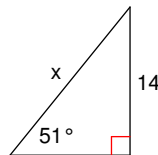
4)



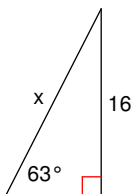
5)



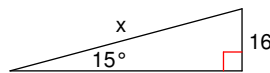
6)



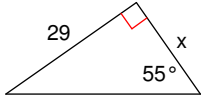
7)



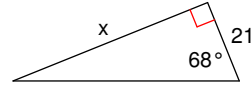
8)



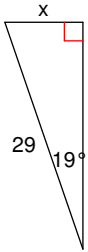
9)



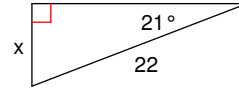
10)



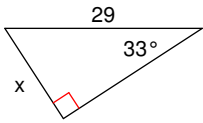
11)



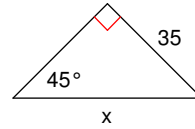
12)



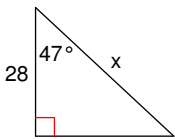
13)



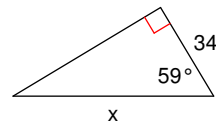
14)



15)



16)



Critical thinking question:

17) Write a new problem that is similar to the others on this worksheet. Solve the question you wrote.

Solving Right Triangles

Date _____ Period _____

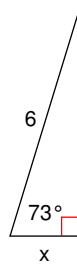
Find the missing side. Round to the nearest tenth.

1)



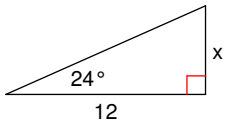
19.4

2)



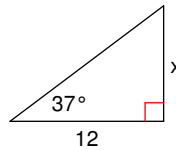
1.8

3)



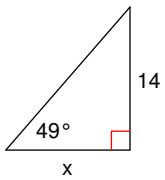
5.3

4)



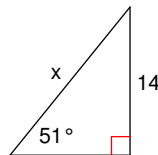
9.0

5)



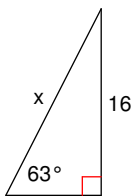
12.2

6)



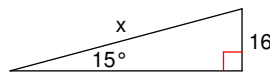
18.0

7)



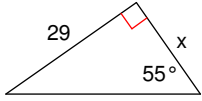
18.0

8)



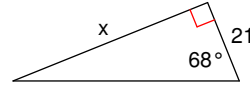
61.8

9)



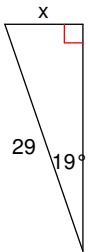
20.3

10)



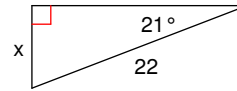
52.0

11)



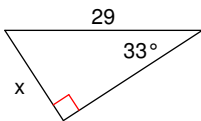
9.4

12)



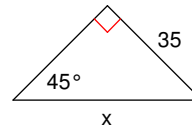
7.9

13)



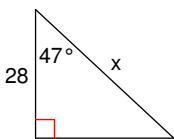
15.8

14)



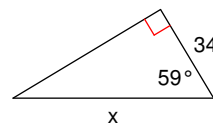
49.5

15)



41.1

16)



66.0

Critical thinking question:

17) Write a new problem that is similar to the others on this worksheet. Solve the question you wrote.

Many answers.

Inverse Trigonometric Ratios

Date _____ Period _____

Find each angle measure to the nearest degree.

1) $\sin B = 0.4848$

2) $\sin A = 0.5150$

3) $\cos A = 0.7431$

4) $\cos W = 0.6157$

5) $\cos A = 0.5878$

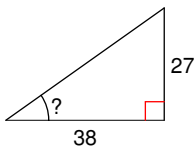
6) $\tan W = 19.0811$

7) $\cos A = 0.4226$

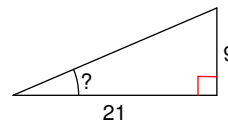
8) $\tan W = 0.5317$

Find the measure of the indicated angle to the nearest degree.

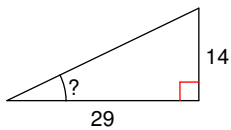
9)



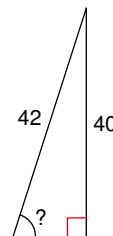
10)



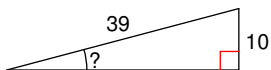
11)



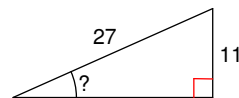
12)

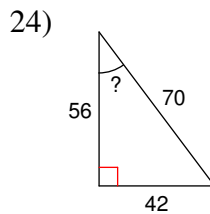
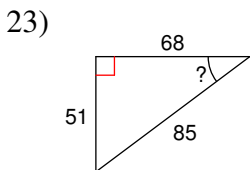
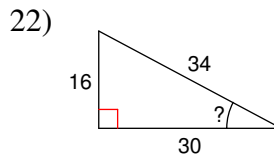
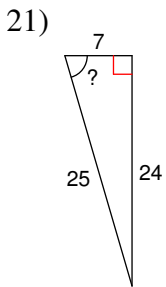
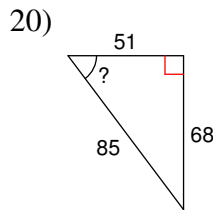
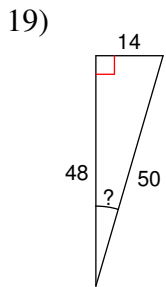
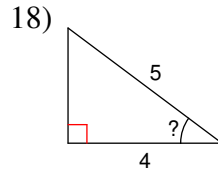
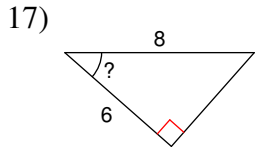
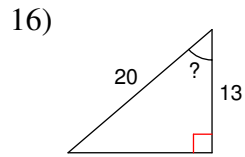
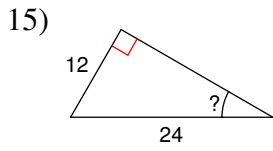


13)



14)





Critical thinking questions:

25) Find an angle x where $\sin x = \cos x$.

26) Draw and label all three sides of a right triangle that has a 40° angle and a hypotenuse of 10 cm.

Inverse Trigonometric Ratios

Date _____ Period _____

Find each angle measure to the nearest degree.

1) $\sin B = 0.4848$

29°

2) $\sin A = 0.5150$

31°

3) $\cos A = 0.7431$

42°

4) $\cos W = 0.6157$

52°

5) $\cos A = 0.5878$

54°

6) $\tan W = 19.0811$

87°

7) $\cos A = 0.4226$

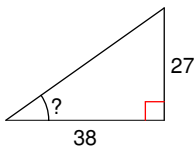
65°

8) $\tan W = 0.5317$

28°

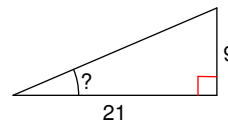
Find the measure of the indicated angle to the nearest degree.

9)



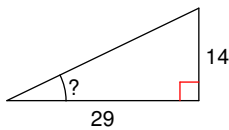
35°

10)



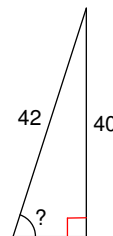
23°

11)



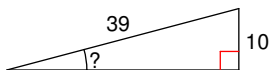
26°

12)



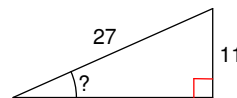
72°

13)

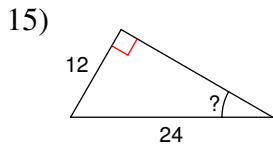


15°

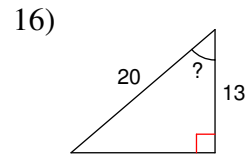
14)



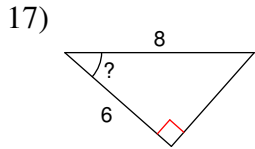
24°



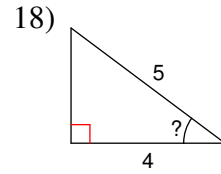
30°



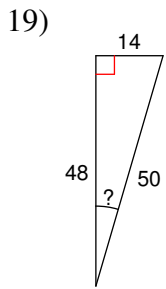
49°



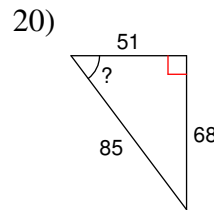
41°



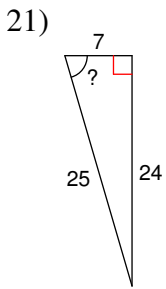
37°



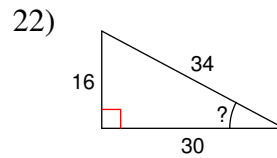
16°



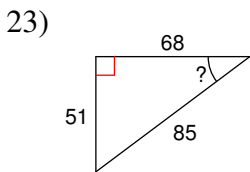
53°



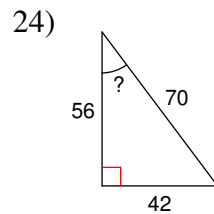
74°



28°



37°



37°

Critical thinking questions:

25) Find an angle x where $\sin x = \cos x$.

45°

26) Draw and label all three sides of a right triangle that has a 40° angle and a hypotenuse of 10 cm.

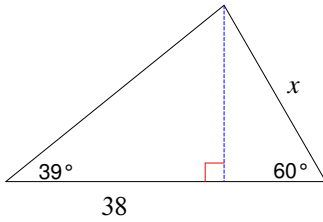
Sides are: 10 cm, 6.4 cm, and 7.7 cm.

Multi-Step Trig. Problems

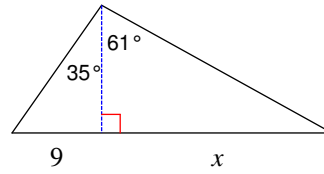
Date _____ Period _____

Find the length of the side labeled x . Round intermediate values to the nearest tenth. Use the rounded values to calculate the next value. Round your final answer to the nearest tenth.

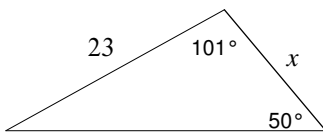
1)



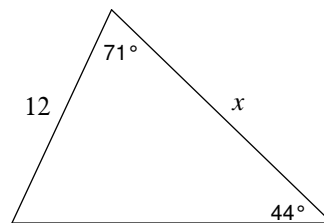
2)



3)

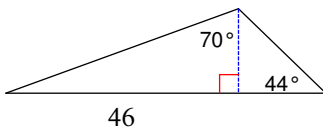


4)

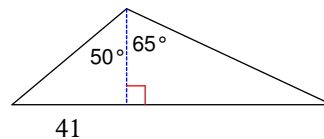


Find the area of each triangle. Round intermediate values to the nearest tenth. Use the rounded values to calculate the next value. Round your final answer to the nearest tenth.

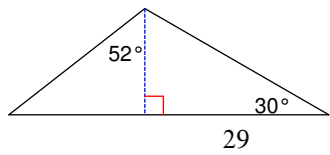
5)



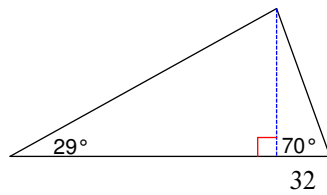
6)



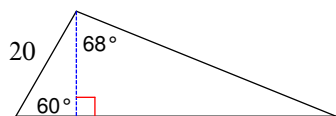
7)



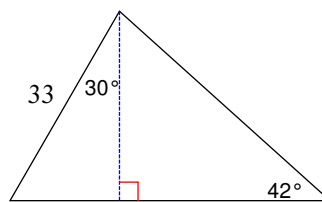
8)



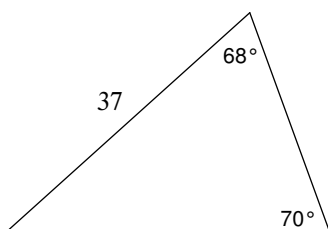
9)



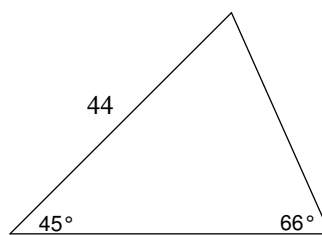
10)



11)



12)

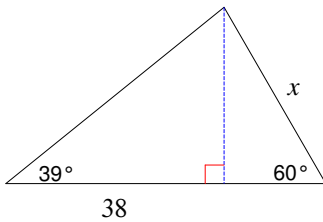


Multi-Step Trig. Problems

Date _____ Period _____

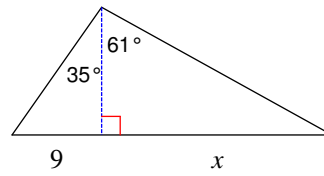
Find the length of the side labeled x . Round intermediate values to the nearest tenth. Use the rounded values to calculate the next value. Round your final answer to the nearest tenth.

1)



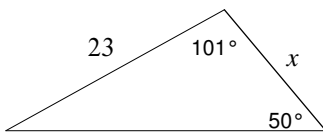
35.6

2)



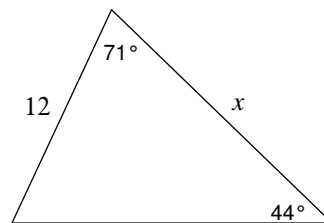
23.3

3)



14.6

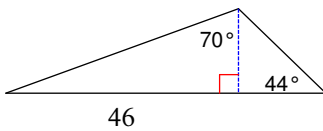
4)



15.7

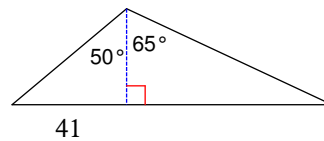
Find the area of each triangle. Round intermediate values to the nearest tenth. Use the rounded values to calculate the next value. Round your final answer to the nearest tenth.

5)



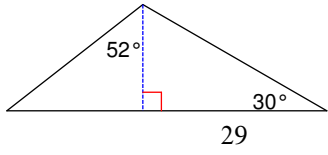
528.6

6)



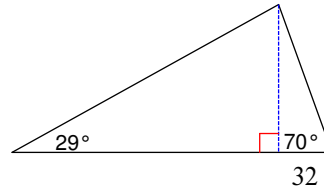
1974.6

7)



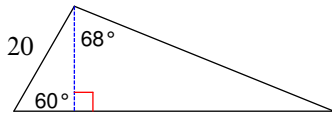
420.8

8)



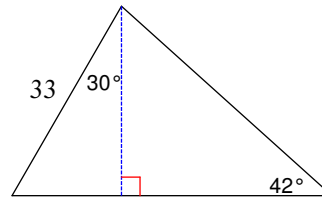
8376.9

9)



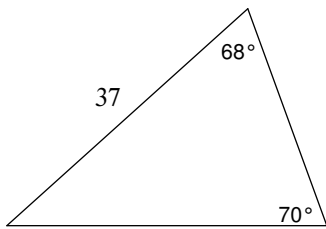
456.7

10)



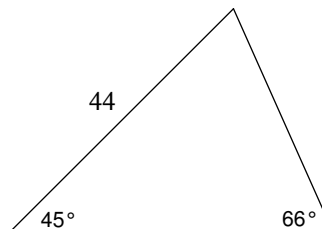
690.7

11)



452.6

12)

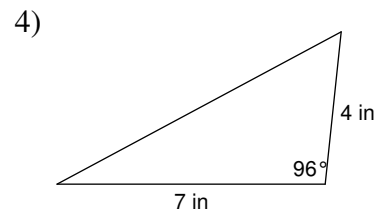
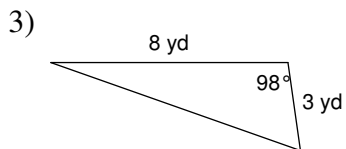
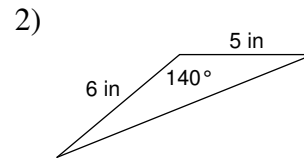
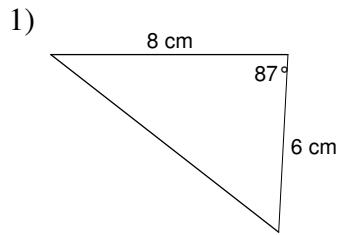


698.2

Trigonometry and Area

Date _____ Period _____

Find the area of each figure. Round your answer to the nearest tenth.



5) A triangle with two sides that measure 6 yd and 2 yd with an included angle of 10° .

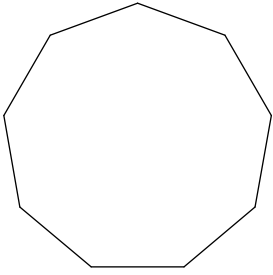
6) A triangle with two sides that measure 6 m and 8 m with an included angle of 137° .

7) A triangle with two sides that measure 5 cm and 8 cm with an included angle of 39° .

8) A triangle with two sides that measure 8 ft and 7 ft with an included angle of 30° .

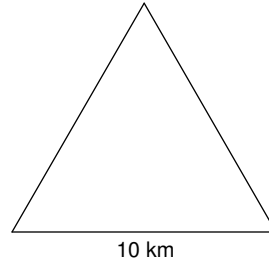
Find the area of each regular polygon. Round your answer to the nearest tenth.

9)

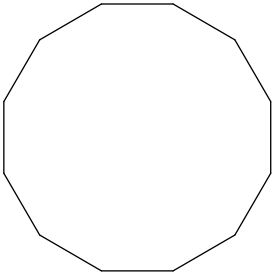


Perimeter = 108 mi

10)

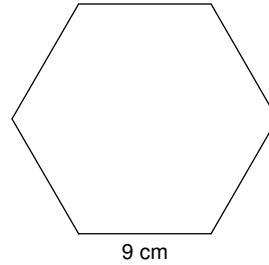


11)



Perimeter = 144 cm

12)



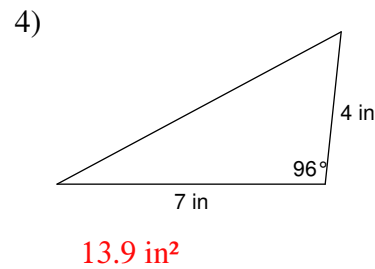
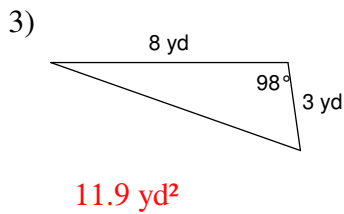
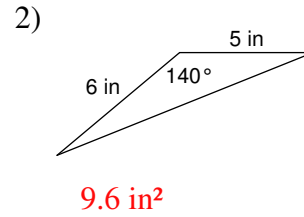
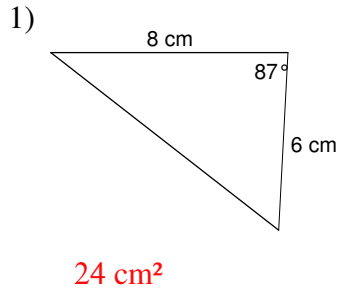
13) A regular hexagon with a perimeter of 48 yd.

14) A regular pentagon 6 ft on each side.

Trigonometry and Area

Date _____ Period _____

Find the area of each figure. Round your answer to the nearest tenth.



5) A triangle with two sides that measure 6 yd and 2 yd with an included angle of 10°.

1 yd²

6) A triangle with two sides that measure 6 m and 8 m with an included angle of 137°.

16.4 m²

7) A triangle with two sides that measure 5 cm and 8 cm with an included angle of 39°.

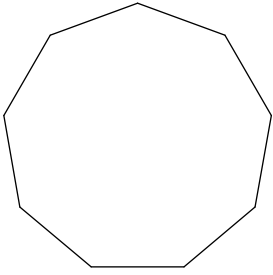
12.6 cm²

8) A triangle with two sides that measure 8 ft and 7 ft with an included angle of 30°.

14 ft²

Find the area of each regular polygon. Round your answer to the nearest tenth.

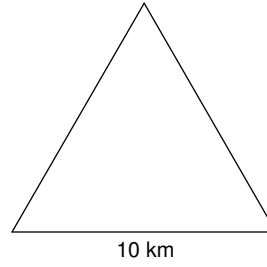
9)



Perimeter = 108 mi

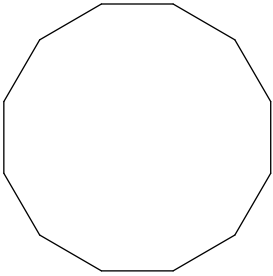
890.2 mi²

10)



43.3 km²

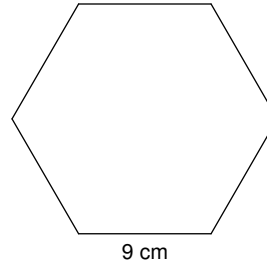
11)



Perimeter = 144 cm

1612.2 cm²

12)



210.4 cm²

13) A regular hexagon with a perimeter of 48 yd.

166.3 yd²

14) A regular pentagon 6 ft on each side.

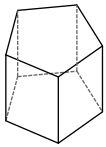
61.9 ft²

Identifying Solid Figures

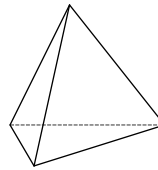
Date _____ Period _____

Name each figure.

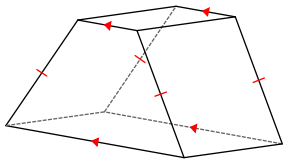
1)



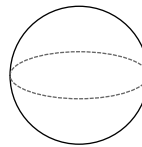
2)



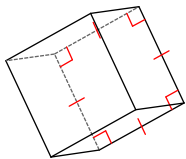
3)



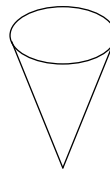
4)



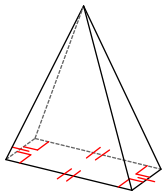
5)



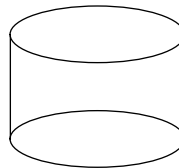
6)



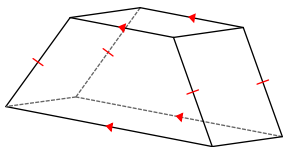
7)



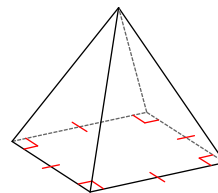
8)



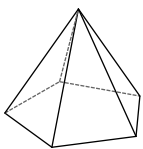
9)



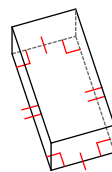
10)



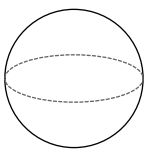
11)



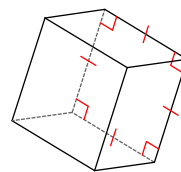
12)



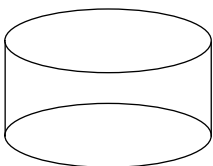
13)



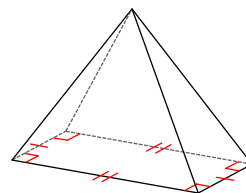
14)



15)



16)

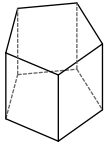


Identifying Solid Figures

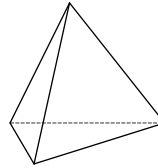
Date _____ Period _____

Name each figure.

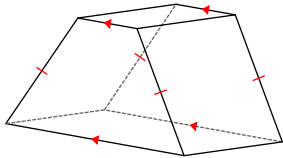
1) pentagonal prism



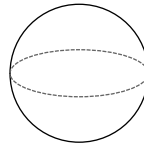
2) triangular pyramid



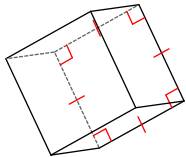
3) trapezoidal prism



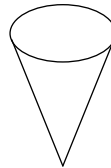
4) sphere



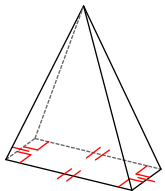
5) square prism



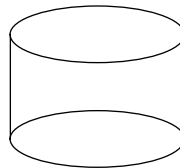
6) cone



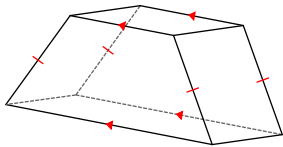
7) rectangular pyramid



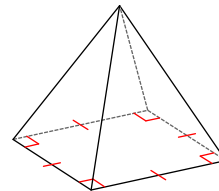
8) cylinder



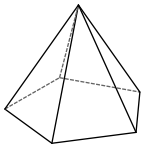
9) trapezoidal prism



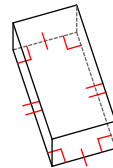
10) square pyramid



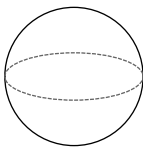
11) pentagonal pyramid



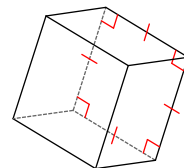
12) rectangular prism



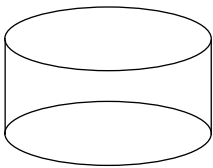
13) sphere



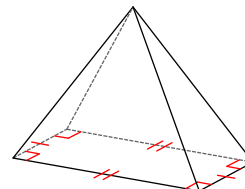
14) square prism



15) cylinder



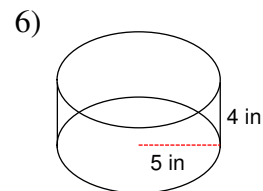
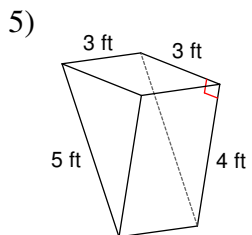
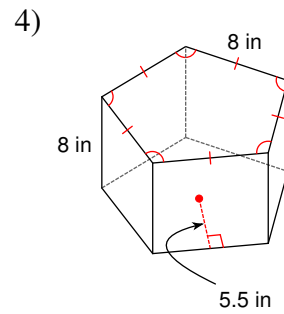
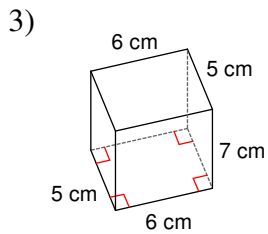
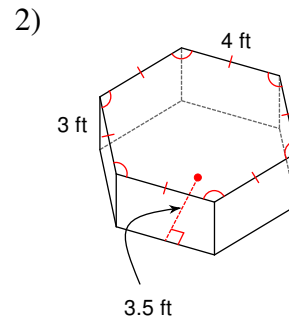
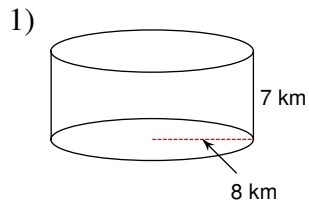
16) rectangular pyramid



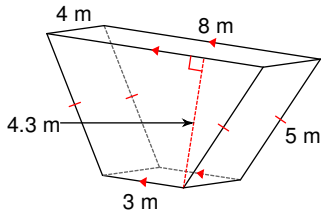
Volume of Prisms and Cylinders

Date _____ Period _____

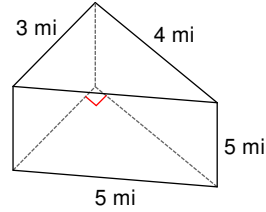
Find the volume of each figure. Round your answers to the nearest tenth, if necessary.



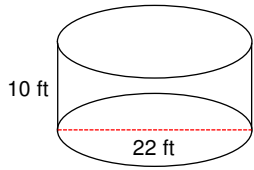
7)



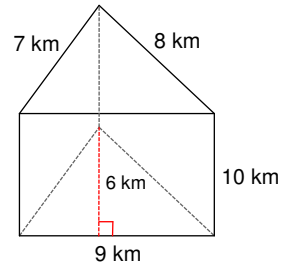
8)



9)



10)



11) A cylinder with a radius of 4 yd and a height of 5 yd.

12) A square prism measuring 6 km along each edge of the base and 5 km tall.

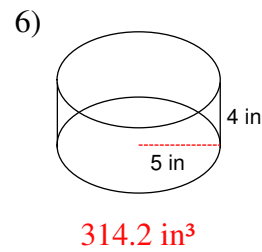
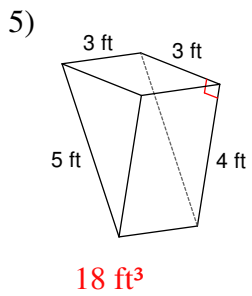
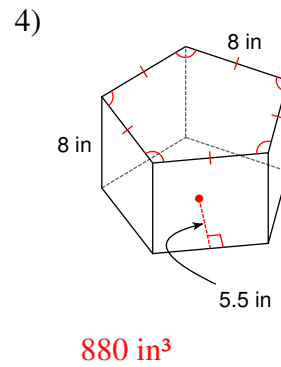
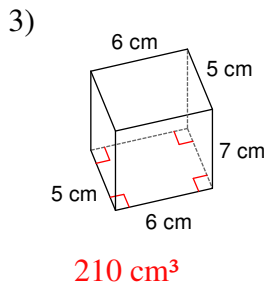
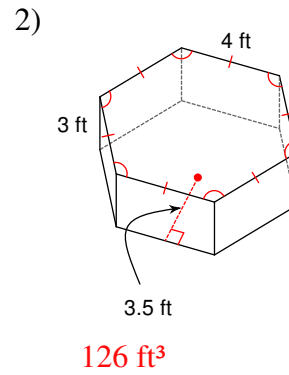
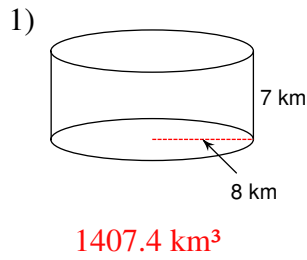
13) A hexagonal prism 5 yd tall with a regular base measuring 5 yd on each edge and an apothem of length 4.3 yd.

14) A trapezoidal prism of height 6 km. The parallel sides of the base have lengths 5 km and 3 km. The other sides of the base are each 2 km. The trapezoid's altitude measures 1.7 km.

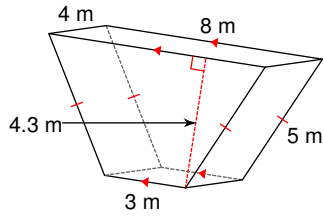
Volume of Prisms and Cylinders

Date _____ Period _____

Find the volume of each figure. Round your answers to the nearest tenth, if necessary.

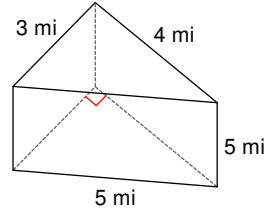


7)



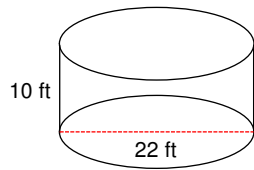
$$94.6 \text{ m}^3$$

8)



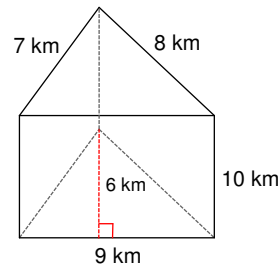
$$30 \text{ mi}^3$$

9)



$$3801.3 \text{ ft}^3$$

10)



$$270 \text{ km}^3$$

11) A cylinder with a radius of 4 yd and a height of 5 yd.

$$251.3 \text{ yd}^3$$

12) A square prism measuring 6 km along each edge of the base and 5 km tall.

$$180 \text{ km}^3$$

13) A hexagonal prism 5 yd tall with a regular base measuring 5 yd on each edge and an apothem of length 4.3 yd.

$$322.5 \text{ yd}^3$$

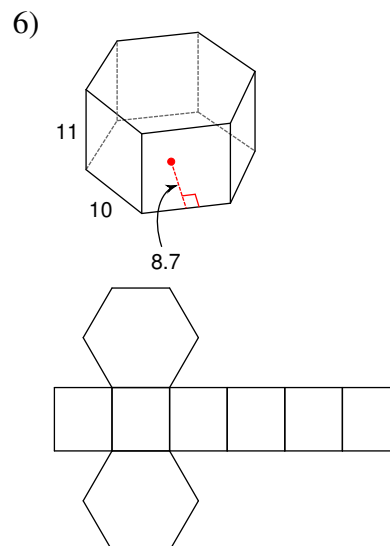
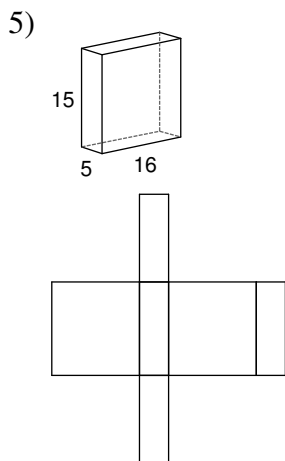
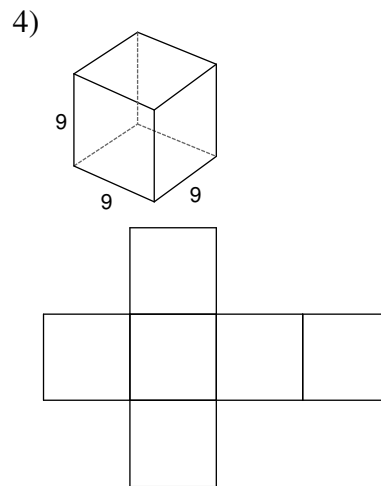
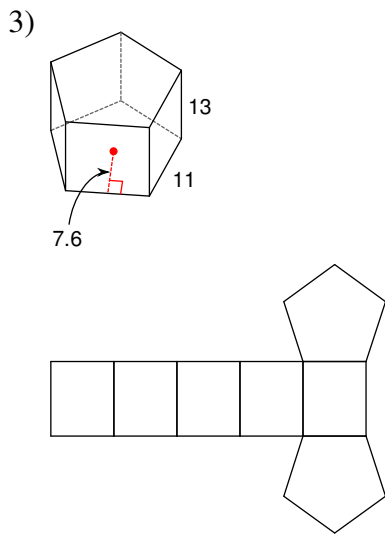
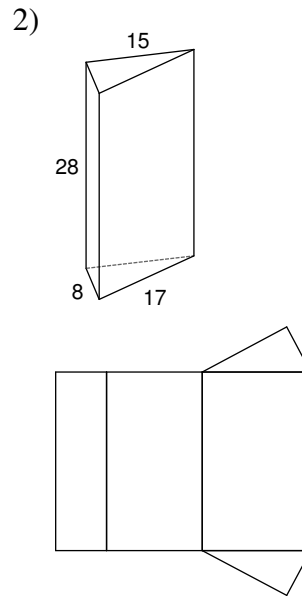
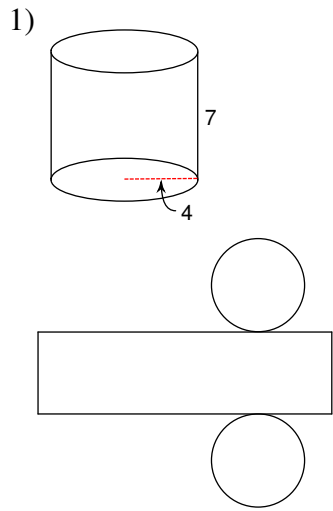
14) A trapezoidal prism of height 6 km. The parallel sides of the base have lengths 5 km and 3 km. The other sides of the base are each 2 km. The trapezoid's altitude measures 1.7 km.

$$40.8 \text{ km}^3$$

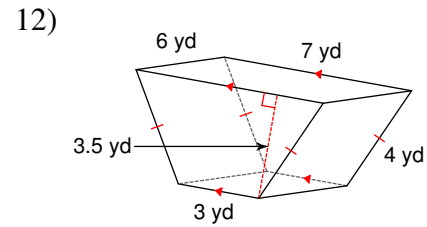
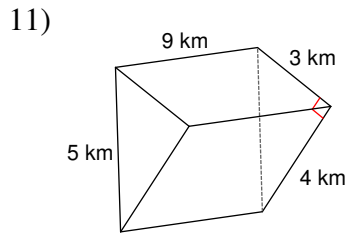
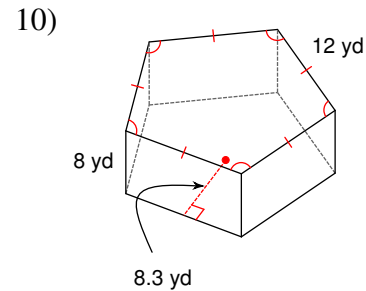
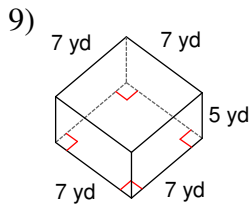
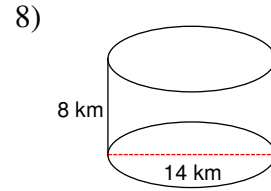
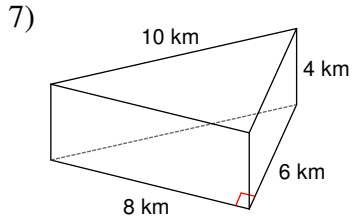
Surface Area of Prisms and Cylinders

Date _____ Period _____

Copy the measurements given onto the net of each solid.



Find the lateral area and surface area of each figure. Round your answers to the nearest thousandth, if necessary.



Find the lateral area and surface area of each figure. Round your answers to the nearest tenth, if necessary.

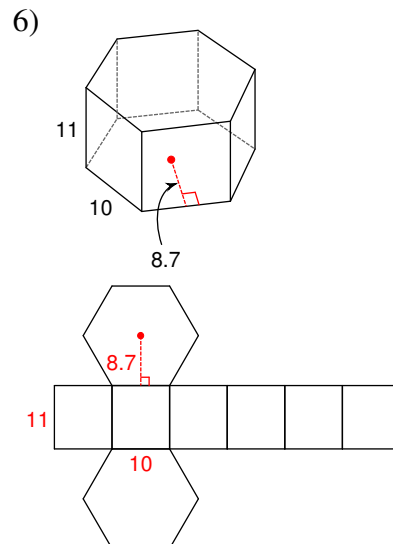
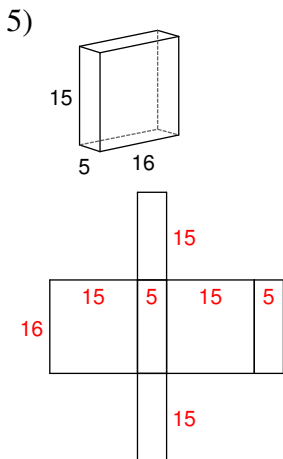
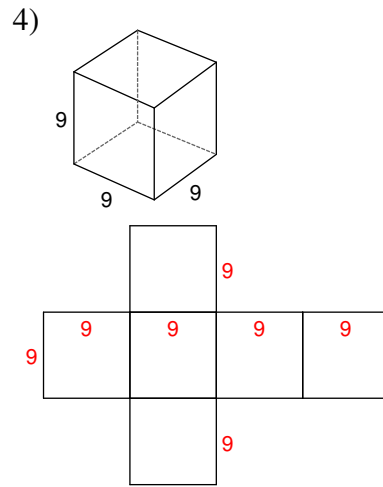
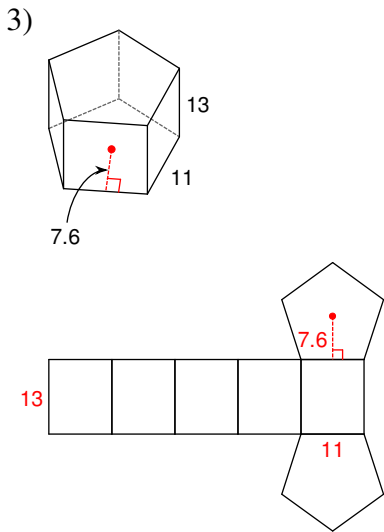
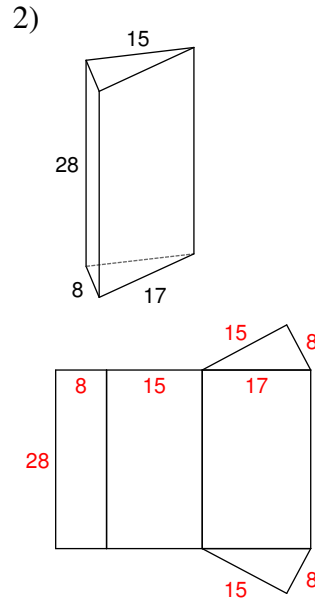
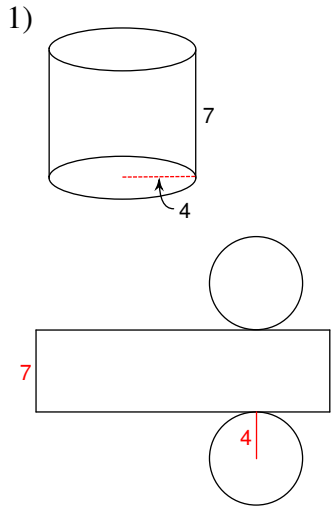
13) A hexagonal prism 6 ft tall with a regular base measuring 9 ft on each edge and an apothem of length 7.8 ft.

14) A prism 2 m tall. The base is a trapezoid whose parallel sides measure 7 m and 3 m. The other sides are each 4 m. The altitude of the trapezoid measures 3.5 m.

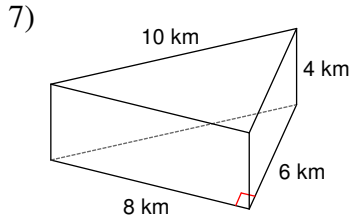
Surface Area of Prisms and Cylinders

Date _____ Period _____

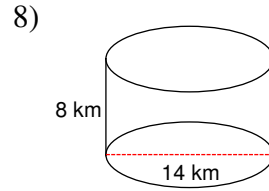
Copy the measurements given onto the net of each solid.



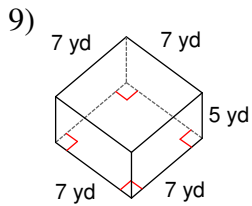
Find the lateral area and surface area of each figure. Round your answers to the nearest thousandth, if necessary.



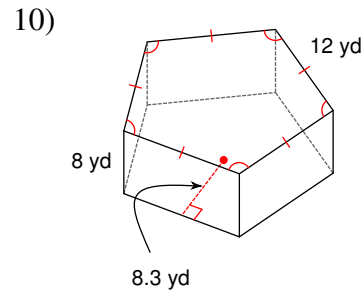
96 km²; 144 km²



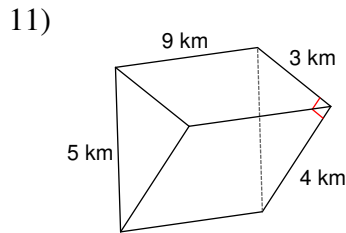
351.86 km²; 659.73 km²



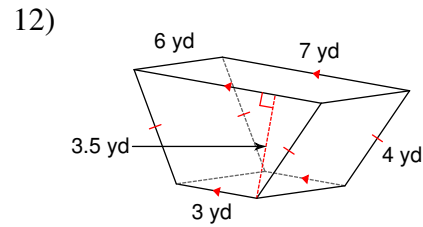
140 yd²; 238 yd²



480 yd²; 978 yd²



108 km²; 120 km²



108 yd²; 143 yd²

Find the lateral area and surface area of each figure. Round your answers to the nearest tenth, if necessary.

13) A hexagonal prism 6 ft tall with a regular base measuring 9 ft on each edge and an apothem of length 7.8 ft.

324 ft²; 745.2 ft²

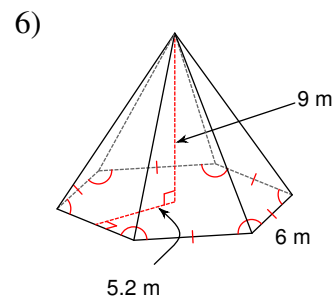
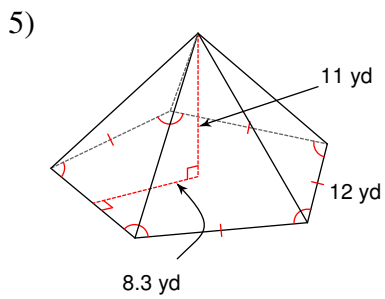
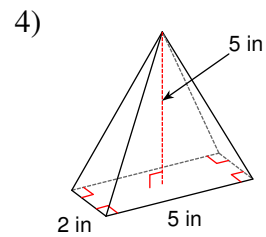
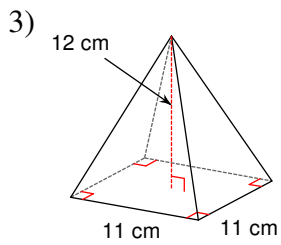
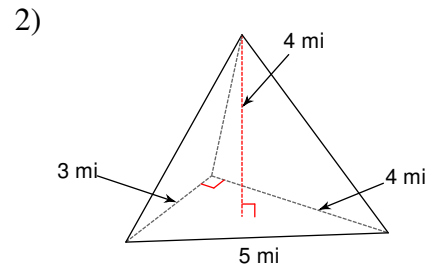
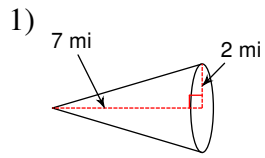
14) A prism 2 m tall. The base is a trapezoid whose parallel sides measure 7 m and 3 m. The other sides are each 4 m. The altitude of the trapezoid measures 3.5 m.

36 m²; 71 m²

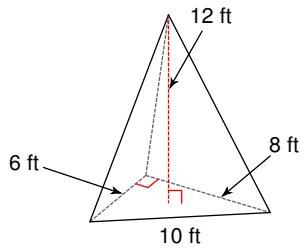
Volume of Pyramids and Cones

Date _____ Period _____

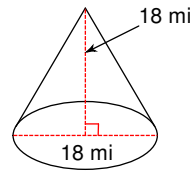
Find the volume of each figure. Round your answers to the nearest tenth, if necessary.



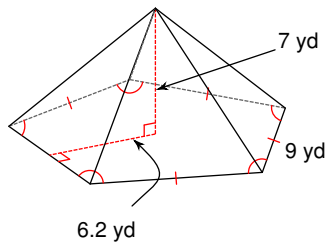
7)



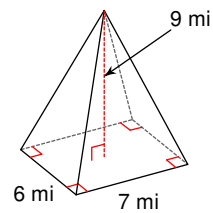
8)



9)



10)



11) A square pyramid measuring 10 yd along each edge of the base with a height of 6 yd.

12) A pyramid 5 m tall with a right triangle for a base with side lengths 6 m, 8 m, and 10 m.

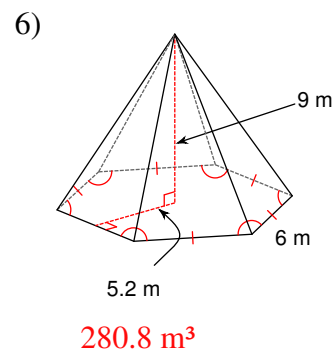
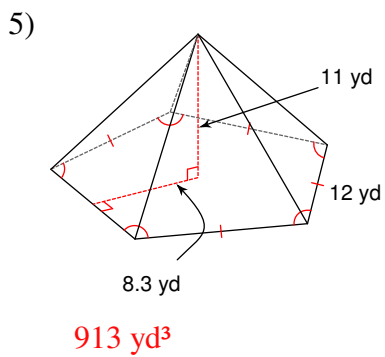
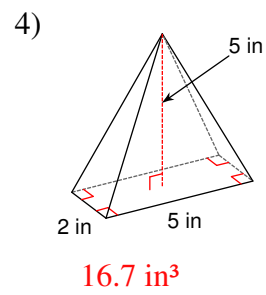
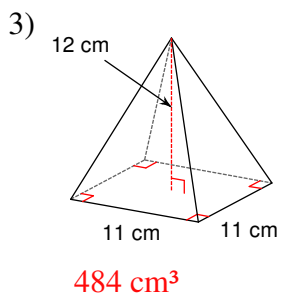
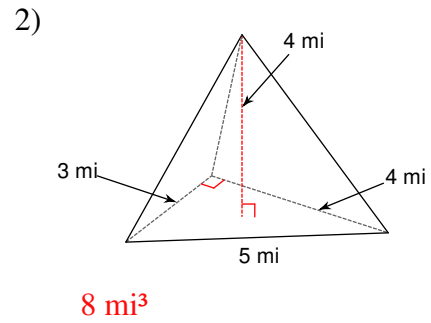
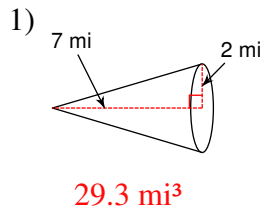
13) A cone with radius 4 m and a height of 12 m.

14) A hexagonal pyramid 11 ft tall with a regular base measuring 6 ft on each side and an apothem of length 5.2 ft.

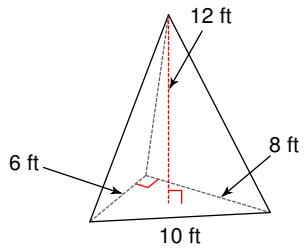
Volume of Pyramids and Cones

Date _____ Period _____

Find the volume of each figure. Round your answers to the nearest tenth, if necessary.

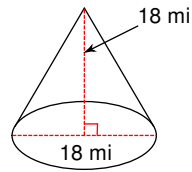


7)



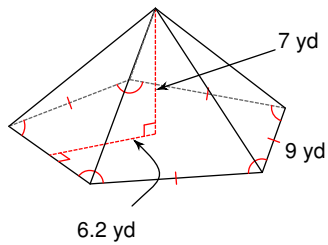
96 ft^3

8)



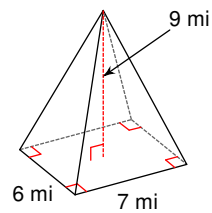
1526.8 mi^3

9)



325.5 yd^3

10)



126 mi^3

11) A square pyramid measuring 10 yd along each edge of the base with a height of 6 yd.

200 yd^3

12) A pyramid 5 m tall with a right triangle for a base with side lengths 6 m, 8 m, and 10 m.

40 m^3

13) A cone with radius 4 m and a height of 12 m.

201.1 m^3

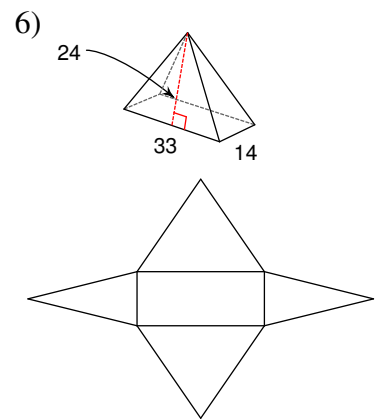
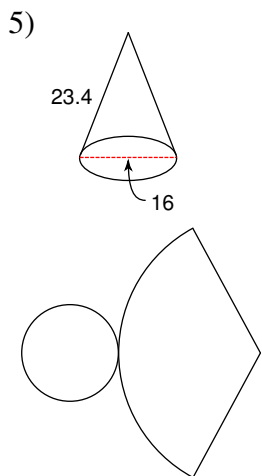
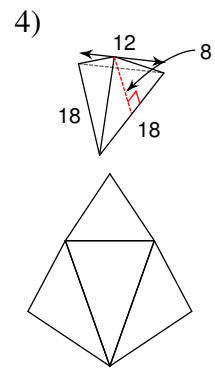
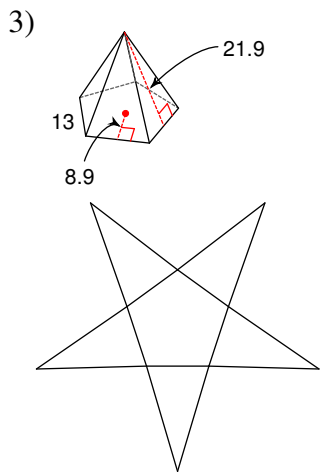
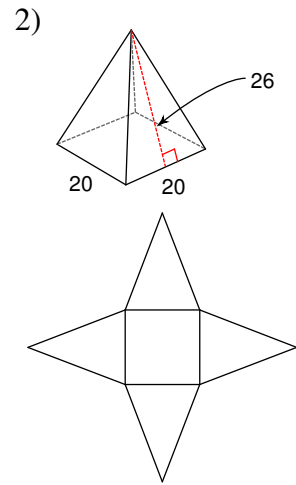
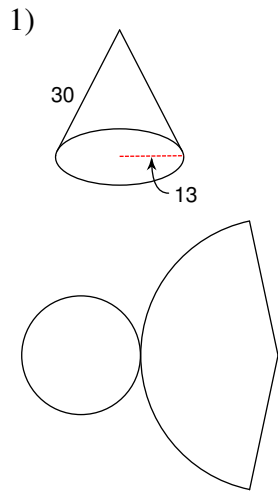
14) A hexagonal pyramid 11 ft tall with a regular base measuring 6 ft on each side and an apothem of length 5.2 ft.

343.2 ft^3

Surface Area of Pyramids and Cones

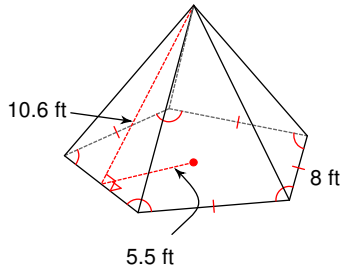
Date _____ Period _____

Copy the measurements given onto the net of each solid.

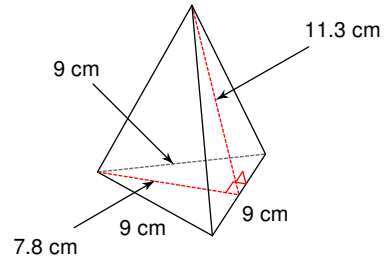


Find the lateral area and surface area of each figure. Round your answers to the nearest tenth, if necessary.

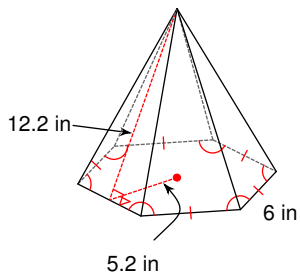
7)



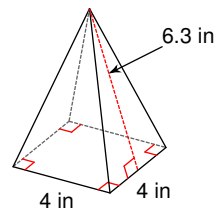
8)



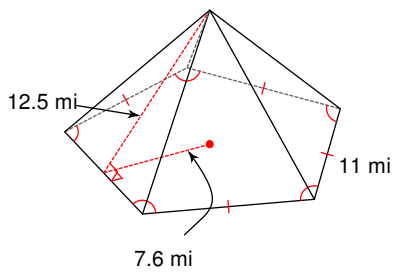
9)



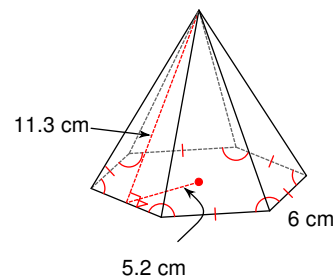
10)



11)



12)



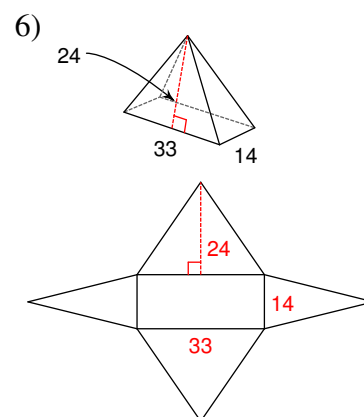
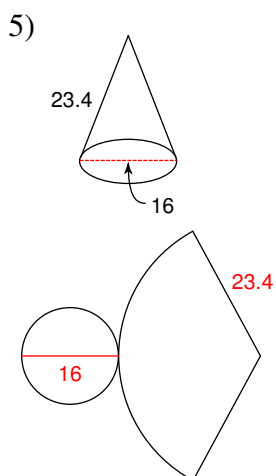
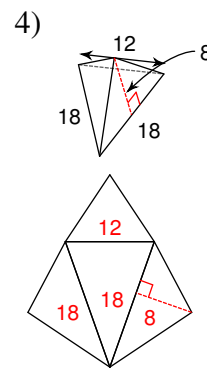
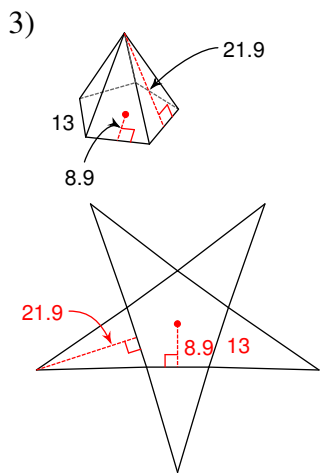
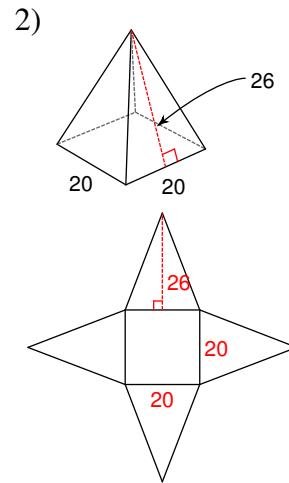
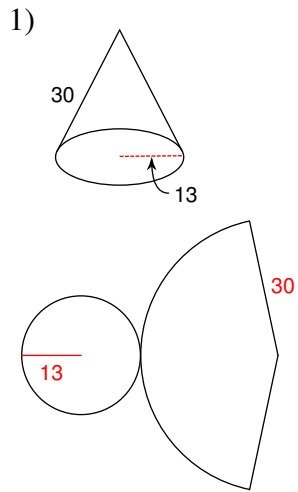
13) A pyramid with slant height 6.8 mi whose triangular base measures 11 mi on each side. Each altitude of the base measures 9.5 mi.

14) A rectangular pyramid measuring 4 in and 9 in along the base, with slant heights of 10.1 in and 9.2 in, respectively.

Surface Area of Pyramids and Cones

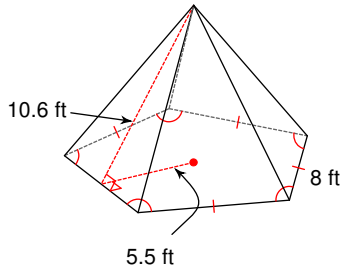
Date _____ Period _____

Copy the measurements given onto the net of each solid.



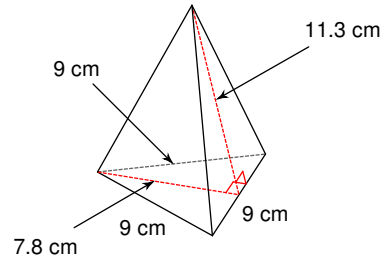
Find the lateral area and surface area of each figure. Round your answers to the nearest tenth, if necessary.

7)



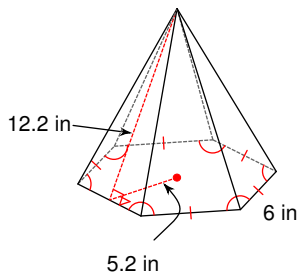
212 ft²; 322 ft²

8)



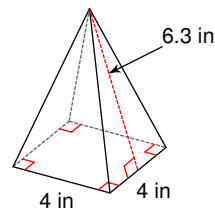
152.6 cm²; 187.7 cm²

9)



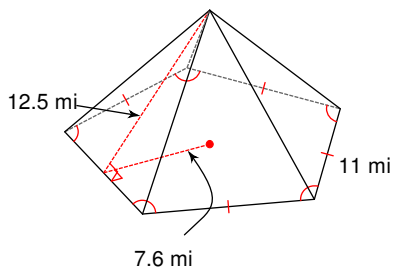
219.6 in²; 313.2 in²

10)



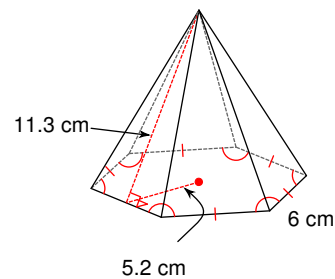
50.4 in²; 66.4 in²

11)



343.8 mi²; 552.8 mi²

12)



203.4 cm²; 297 cm²

13) A pyramid with slant height 6.8 mi whose triangular base measures 11 mi on each side. Each altitude of the base measures 9.5 mi.

112.2 mi²; 164.5 mi²

14) A rectangular pyramid measuring 4 in and 9 in along the base, with slant heights of 10.1 in and 9.2 in, respectively.

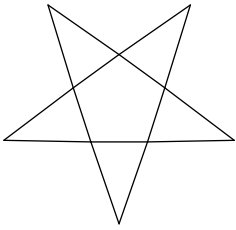
123.2 in²; 159.2 in²

More Nets of Solids

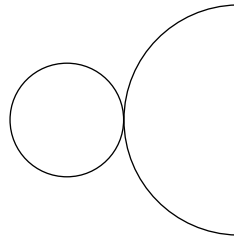
Date _____ Period _____

Identify each solid given its net.

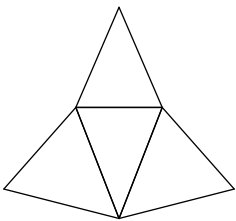
1)



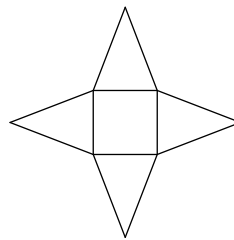
2)



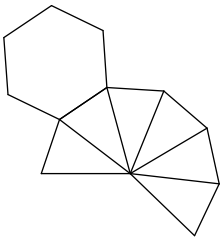
3)



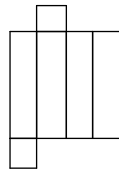
4)



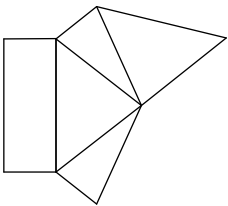
5)



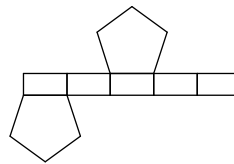
6)



7)

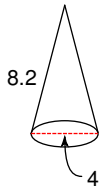


8)

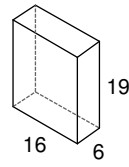


Sketch the net of each solid. Label the measurements given.

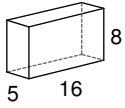
9)



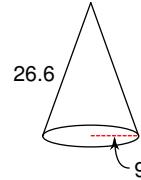
10)



11)

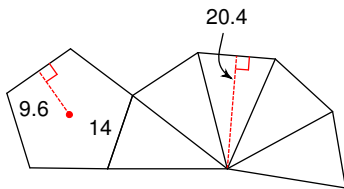


12)

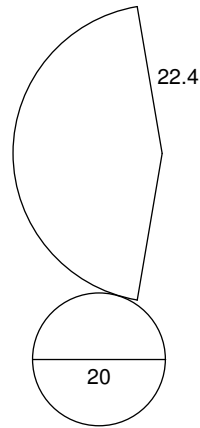


Sketch the solid that can be created from each net. Label the measurements given.

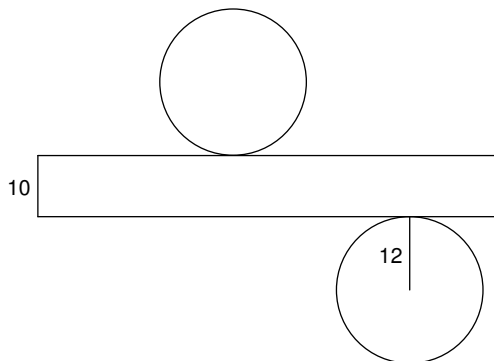
13)



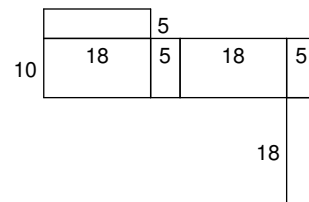
14)



15)



16)

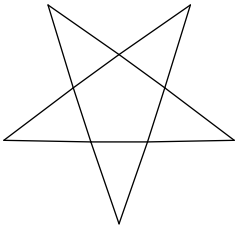


More Nets of Solids

Date _____ Period _____

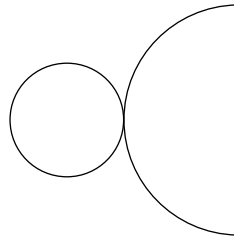
Identify each solid given its net.

1)



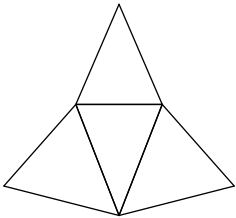
pentagonal pyramid

2)



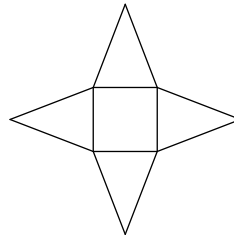
cone

3)



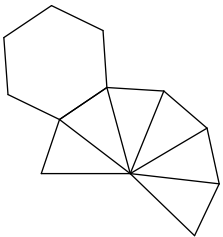
triangular pyramid

4)



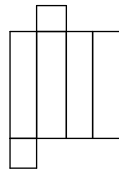
square pyramid

5)



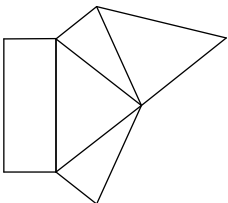
hexagonal pyramid

6)



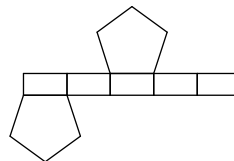
rectangular prism

7)



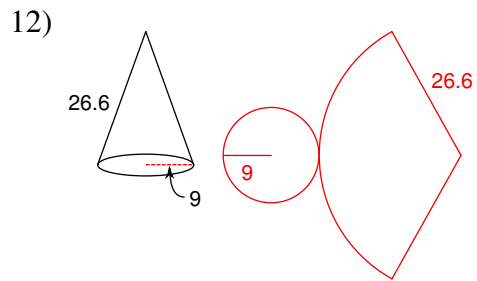
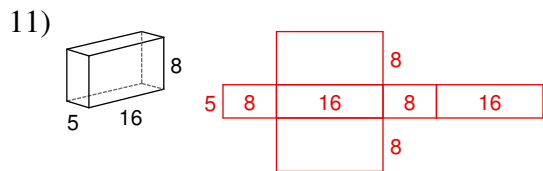
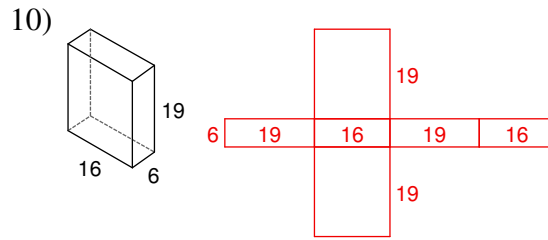
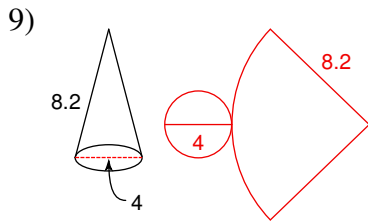
rectangular pyramid

8)

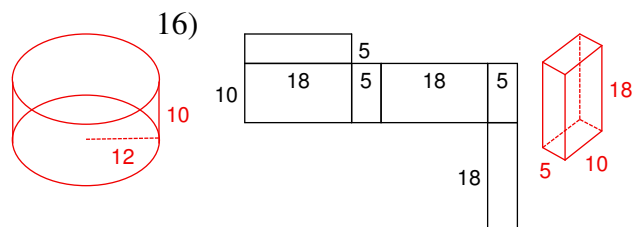
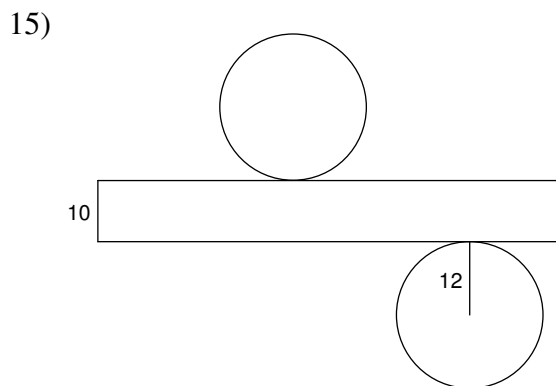
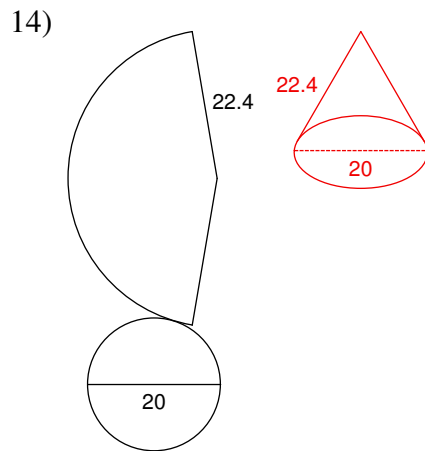
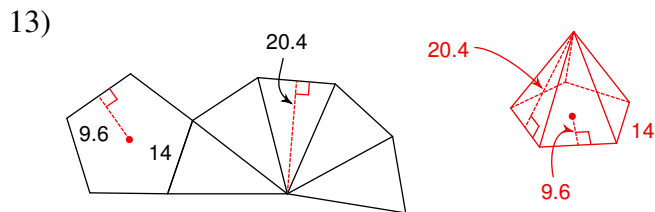


pentagonal prism

Sketch the net of each solid. Label the measurements given.



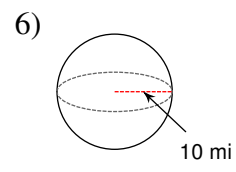
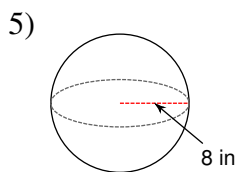
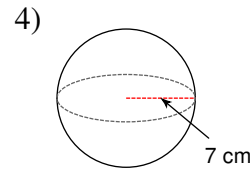
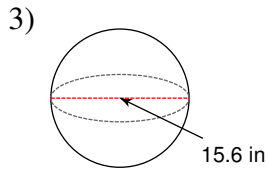
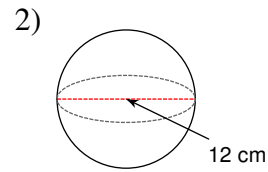
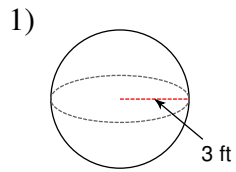
Sketch the solid that can be created from each net. Label the measurements given.



Spheres

Date _____ Period _____

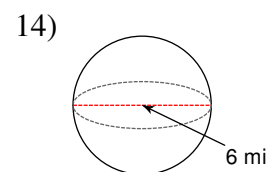
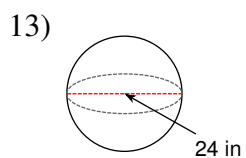
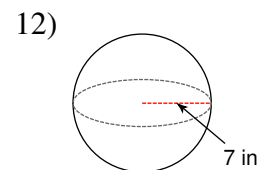
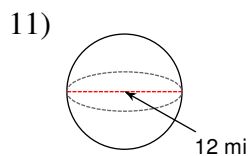
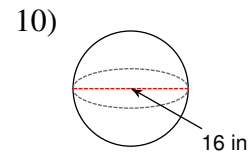
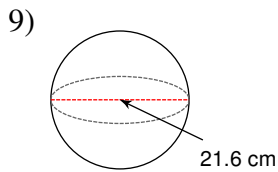
Find the surface area of each figure. Round your answers to the nearest tenth, if necessary.



7) A sphere with a diameter of 6.2 in.

8) A sphere with a radius of 10 mi.

Find the volume of each figure. Round your answers to the nearest tenth, if necessary.



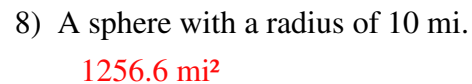
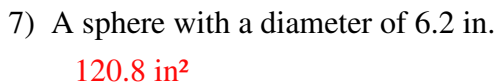
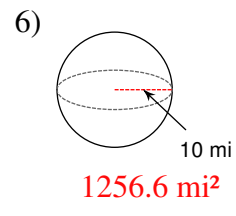
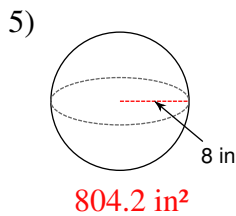
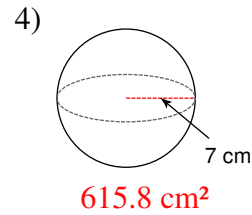
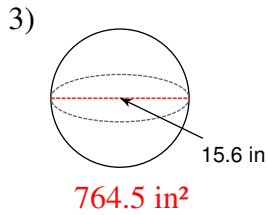
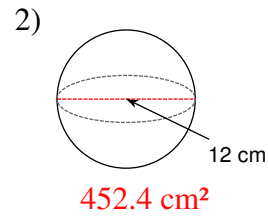
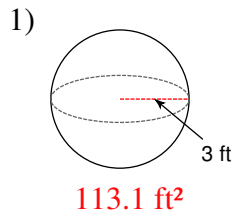
15) A sphere with a diameter of 2 m.

16) A sphere with a diameter of 10 ft.

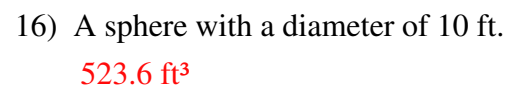
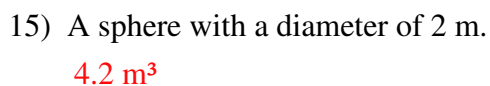
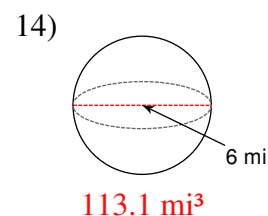
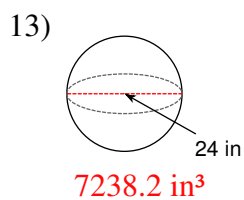
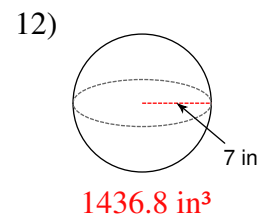
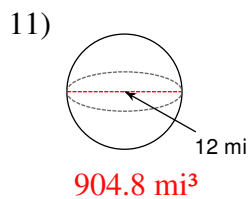
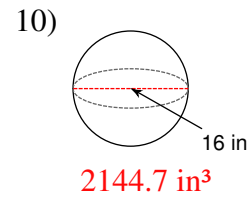
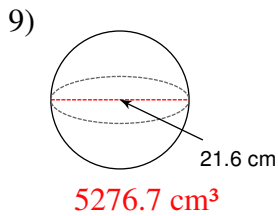
Spheres

Date _____ Period _____

Find the surface area of each figure. Round your answers to the nearest tenth, if necessary.



Find the volume of each figure. Round your answers to the nearest tenth, if necessary.

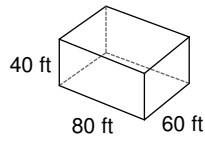
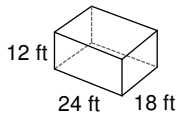


Similar Solids

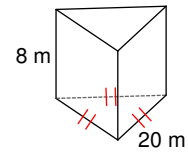
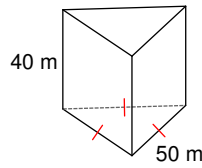
Date _____ Period _____

Are the two figures similar? If so, state the scale factor.

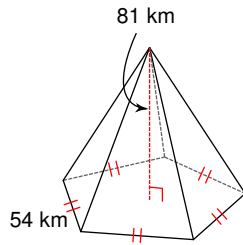
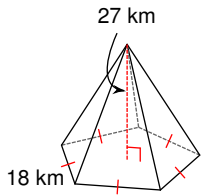
1)



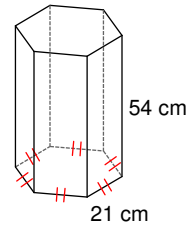
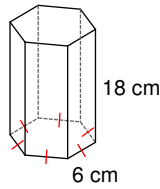
2)



3)

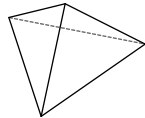
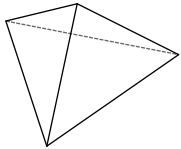


4)



Each pair of figures is similar. Use the information given to find the scale factor of the figure on the left to the figure on the right.

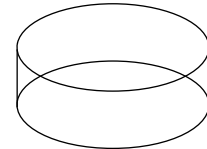
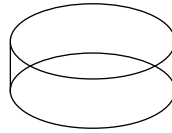
5)



$SA = 396 \text{ cm}^2$

$SA = 275 \text{ cm}^2$

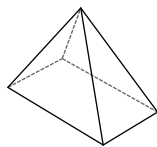
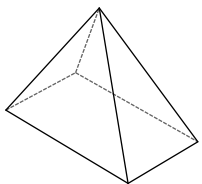
6)



$SA = 7\pi \text{ in}^2$

$SA = 175\pi \text{ in}^2$

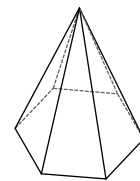
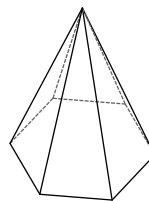
7)



$V = 20000 \text{ mi}^3$

$V = 10240 \text{ mi}^3$

8)

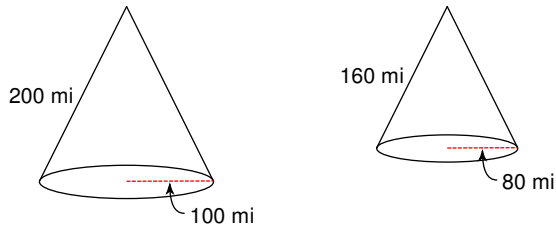


$V = 3240 \text{ in}^3$

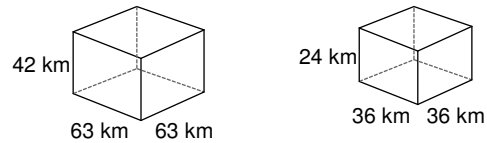
$V = 120 \text{ in}^3$

Each pair of figures is similar. Find the scale factor of the figure on the left to the figure on the right. Then find the ratio of surface areas and the ratio of volumes.

9)



10)



The scale factor between two similar figures is given. The surface area and volume of the smaller figure are given. Find the surface area and volume of the larger figure.

11) scale factor = 1 : 2
 SA = 90 yd²
 V = 216 yd³

12) scale factor = 4 : 9
 SA = 256 km²
 V = 1536 km³

Some information about the surface area and volume of two similar solids has been given. Find the missing value.

13) $\frac{\text{Solid \#1}}{\text{SA} = 1088 \text{ km}^2}$ $\frac{\text{Solid \#2}}{\text{SA} = 425 \text{ km}^2}$
 $\text{V} = 13312 \text{ km}^3$ $\text{V} = ?$

14) $\frac{\text{Solid \#1}}{\text{SA} = 1100 \text{ yd}^2}$ $\frac{\text{Solid \#2}}{\text{SA} = 176 \text{ yd}^2}$
 $\text{V} = 19000 \text{ yd}^3$ $\text{V} = ?$

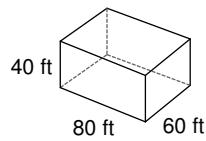
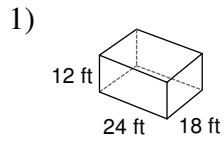
15) $\frac{\text{Solid \#1}}{\text{SA} = 468 \text{ ft}^2}$ $\frac{\text{Solid \#2}}{\text{SA} = ?}$
 $\text{V} = 1944 \text{ ft}^3$ $\text{V} = 9 \text{ ft}^3$

16) $\frac{\text{Solid \#1}}{\text{SA} = 54 \text{ m}^2}$ $\frac{\text{Solid \#2}}{\text{SA} = ?}$
 $\text{V} = 648 \text{ m}^3$ $\text{V} = 8232 \text{ m}^3$

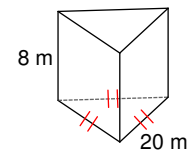
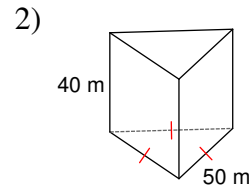
Similar Solids

Date _____ Period _____

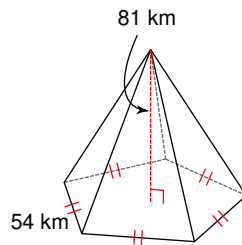
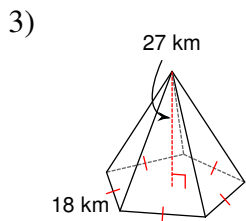
Are the two figures similar? If so, state the scale factor.



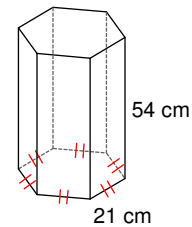
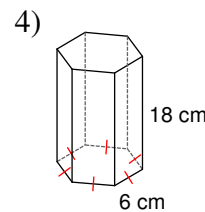
Yes; 3 : 10



No

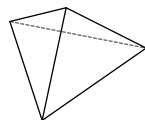
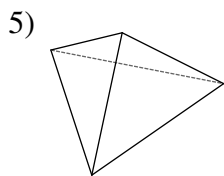


Yes; 1 : 3



No

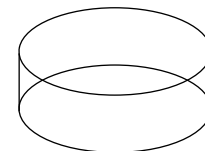
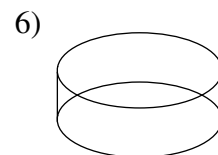
Each pair of figures is similar. Use the information given to find the scale factor of the figure on the left to the figure on the right.



SA = 396 cm²

SA = 275 cm²

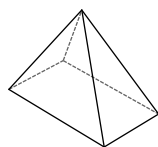
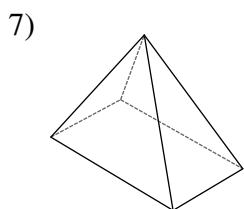
6 : 5



SA = 7π in²

SA = 175π in²

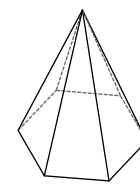
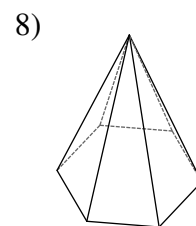
1 : 5



V = 20000 mi³

V = 10240 mi³

5 : 4



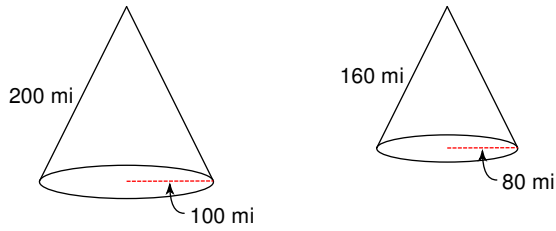
V = 3240 in³

V = 120 in³

3 : 1

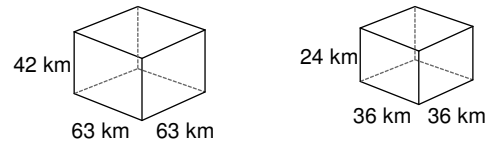
Each pair of figures is similar. Find the scale factor of the figure on the left to the figure on the right. Then find the ratio of surface areas and the ratio of volumes.

9)



$$5 : 4, 25 : 16, 125 : 64$$

10)



$$7 : 4, 49 : 16, 343 : 64$$

The scale factor between two similar figures is given. The surface area and volume of the smaller figure are given. Find the surface area and volume of the larger figure.

11) scale factor = 1 : 2

$$SA = 90 \text{ yd}^2$$

$$V = 216 \text{ yd}^3$$

$$SA = 360 \text{ yd}^2, V = 1728 \text{ yd}^3$$

12) scale factor = 4 : 9

$$SA = 256 \text{ km}^2$$

$$V = 1536 \text{ km}^3$$

$$SA = 1296 \text{ km}^2, V = 17496 \text{ km}^3$$

Some information about the surface area and volume of two similar solids has been given. Find the missing value.

13)

<u>Solid #1</u>	<u>Solid #2</u>
SA = 1088 km ²	SA = 425 km ²
V = 13312 km ³	V = ?

$$V = 3250 \text{ km}^3$$

14)

<u>Solid #1</u>	<u>Solid #2</u>
SA = 1100 yd ²	SA = 176 yd ²
V = 19000 yd ³	V = ?

$$V = 1216 \text{ yd}^3$$

15)

<u>Solid #1</u>	<u>Solid #2</u>
SA = 468 ft ²	SA = ?
V = 1944 ft ³	V = 9 ft ³

$$SA = 13 \text{ ft}^2$$

16)

<u>Solid #1</u>	<u>Solid #2</u>
SA = 54 m ²	SA = ?
V = 648 m ³	V = 8232 m ³

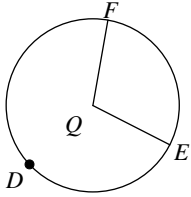
$$SA = 294 \text{ m}^2$$

Arcs and Central Angles

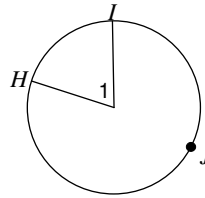
Date _____ Period _____

Name the arc made by the given angle.

1) $\angle FQE$

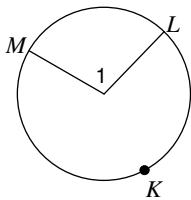


2) $\angle I$

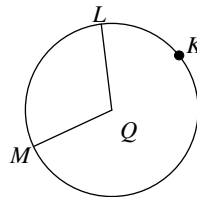


Name the central angle of the given arc.

3) \widehat{ML}

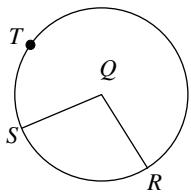


4) \widehat{ML}

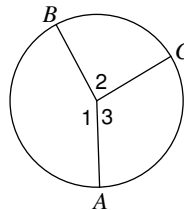


If an angle is given, name the arc it makes. If an arc is given, name its central angle.

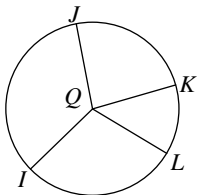
5) \widehat{RS}



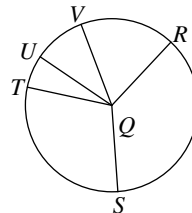
6) Major arc for $\angle I$



7) $\angle KQL$

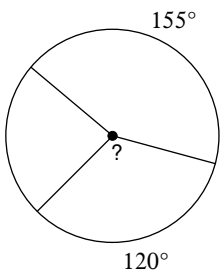


8) \widehat{SVT}

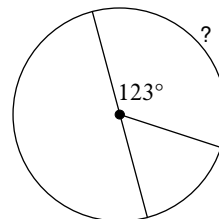


Find the measure of the arc or central angle indicated. Assume that lines which appear to be diameters are actual diameters.

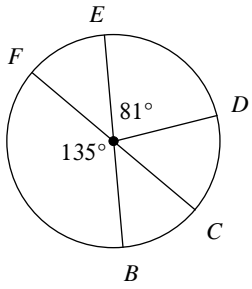
9)



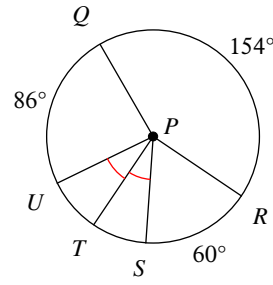
10)



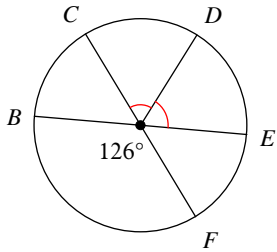
11) $m\widehat{CFD}$



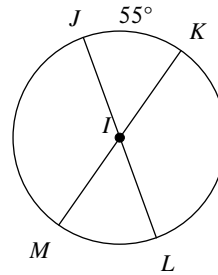
12) $m\angle SPQ$



13) $m\widehat{EFC}$

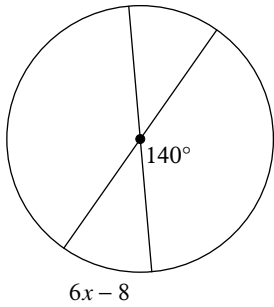


14) $m\angle MIJ$

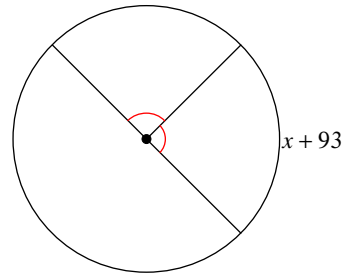


Solve for x . Assume that lines which appear to be diameters are actual diameters.

15)

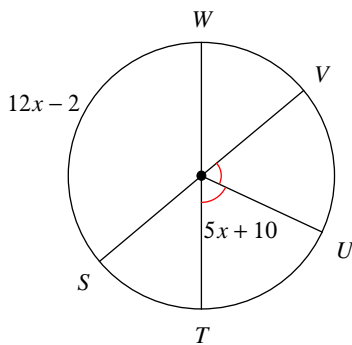


16)

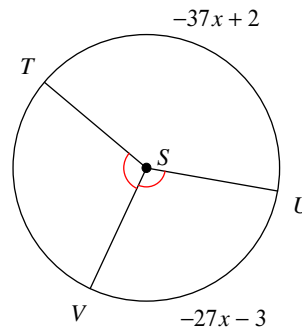


Find the measure of the arc or central angle indicated. Assume that lines which appear to be diameters are actual diameters.

17) $m\widehat{WV}$



18) $m\angle VST$

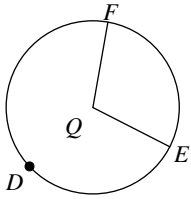


Arcs and Central Angles

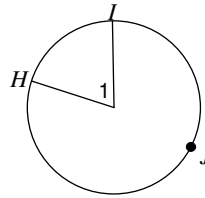
Date _____ Period _____

Name the arc made by the given angle.

1) $\angle FQE$ \widehat{FE}

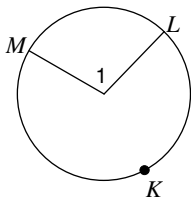


2) $\angle I$ \widehat{HI}

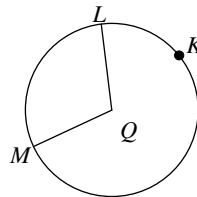


Name the central angle of the given arc.

3) \widehat{ML} $\angle I$

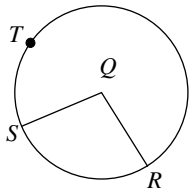


4) \widehat{ML} $\angle MQL$

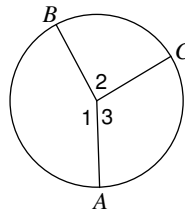


If an angle is given, name the arc it makes. If an arc is given, name its central angle.

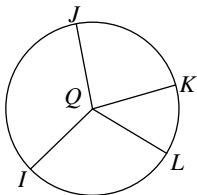
5) \widehat{RS} $\angle RQS$



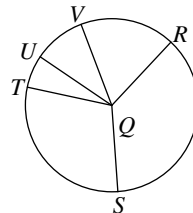
6) Major arc for $\angle I$ \widehat{ACB}



7) $\angle KQL$ \widehat{KL}

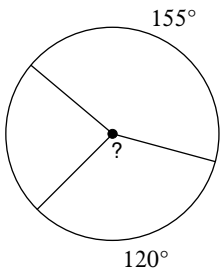


8) \widehat{SVT} $\angle SQT$

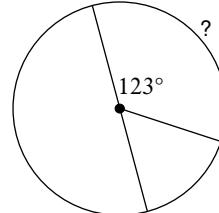


Find the measure of the arc or central angle indicated. Assume that lines which appear to be diameters are actual diameters.

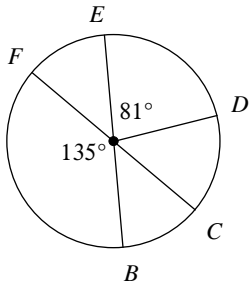
9) 120°



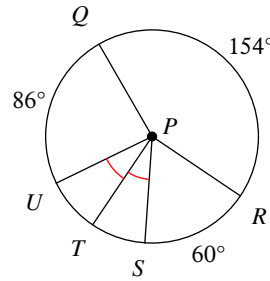
10) 123°



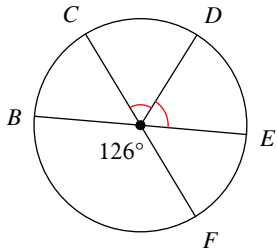
11) $m\widehat{CFD}$ 306°



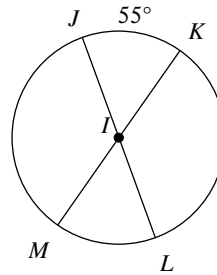
12) $m\angle SPQ$ 146°



13) $m\widehat{EFC}$ 234°

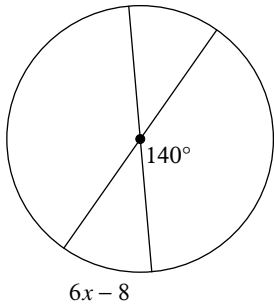


14) $m\angle MIJ$ 125°

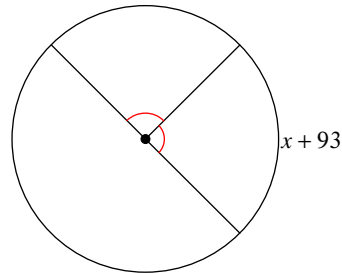


Solve for x . Assume that lines which appear to be diameters are actual diameters.

15) 8

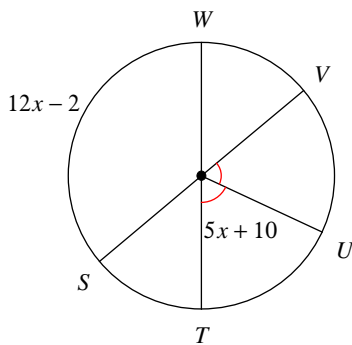


16) -3

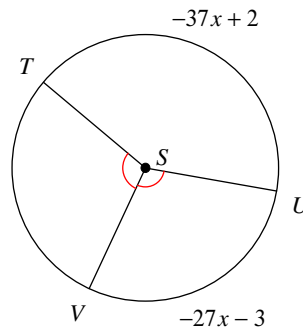


Find the measure of the arc or central angle indicated. Assume that lines which appear to be diameters are actual diameters.

17) $m\widehat{WV}$ 50°



18) $m\angle VST$ 105°

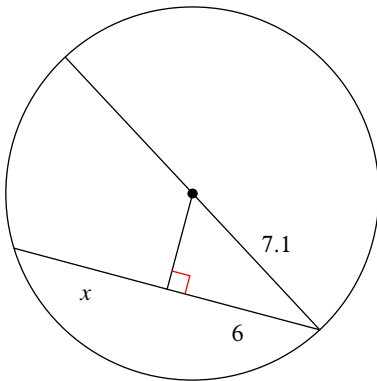


Arcs and Chords

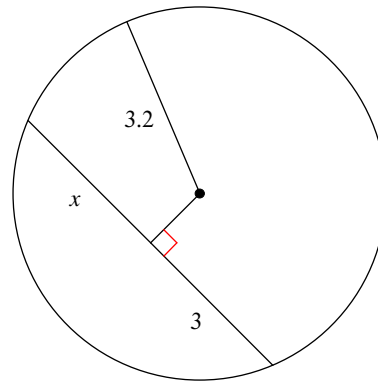
Date _____ Period _____

Find the length of the segment indicated. Round your answer to the nearest tenth if necessary.

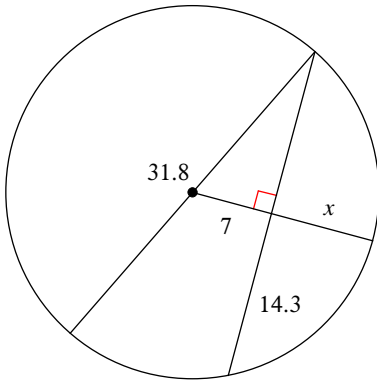
1)



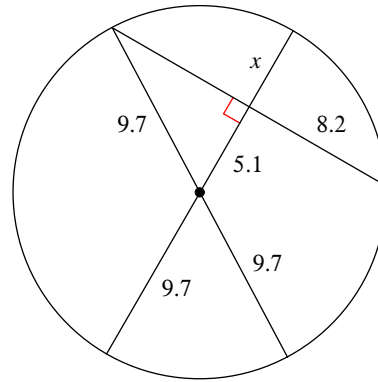
2)



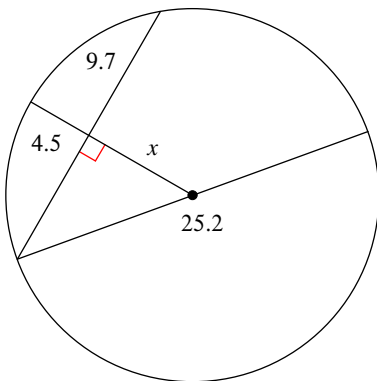
3)



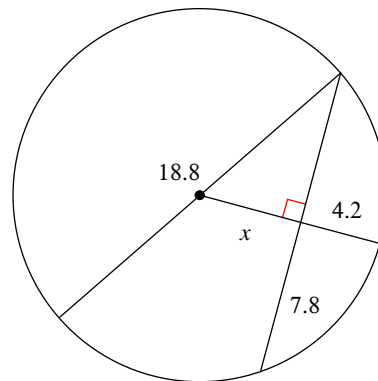
4)



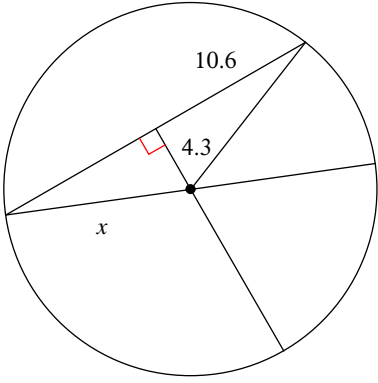
5)



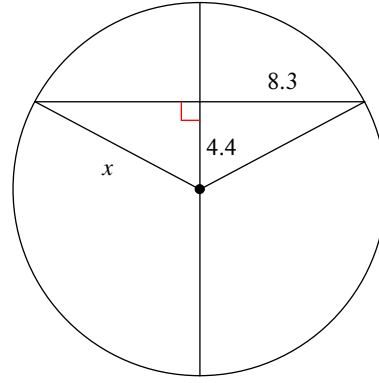
6)



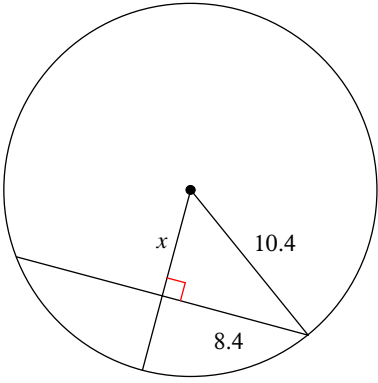
7)



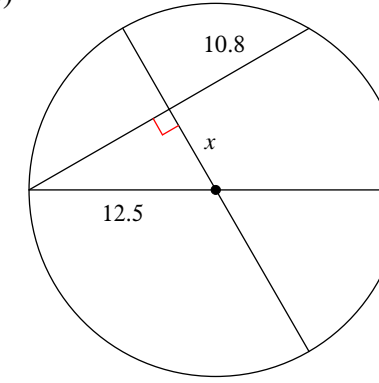
8)



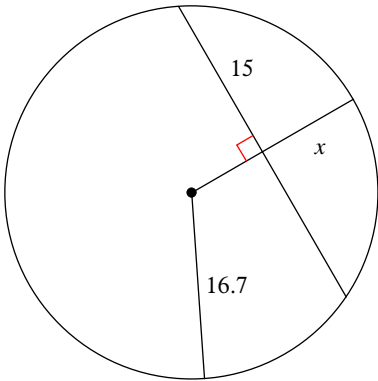
9)



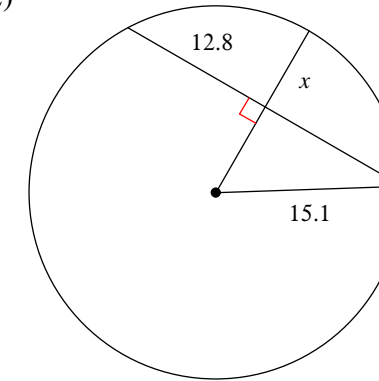
10)



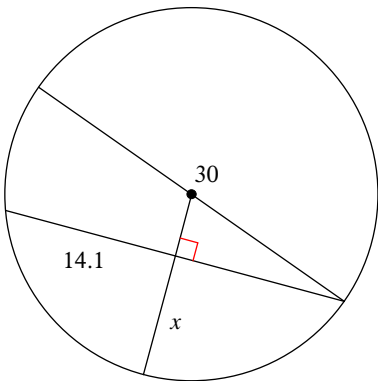
11)



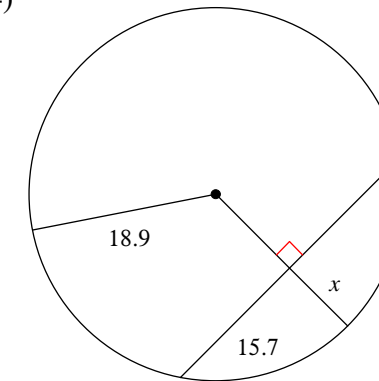
12)



13)



14)

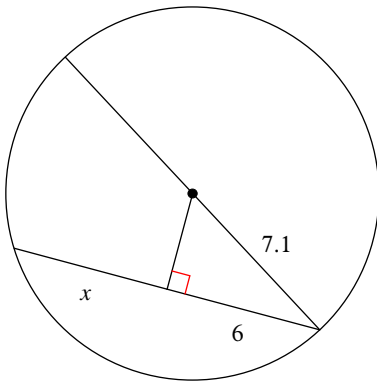


Arcs and Chords

Date _____ Period _____

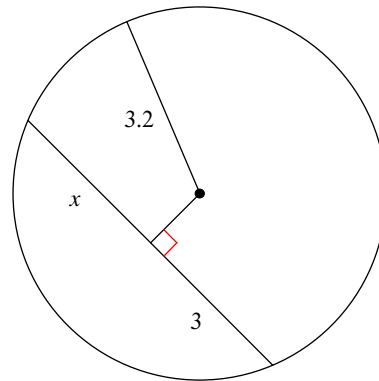
Find the length of the segment indicated. Round your answer to the nearest tenth if necessary.

1)



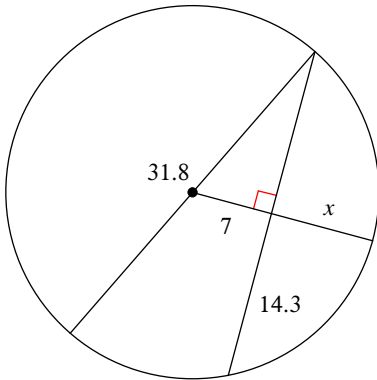
6

2)



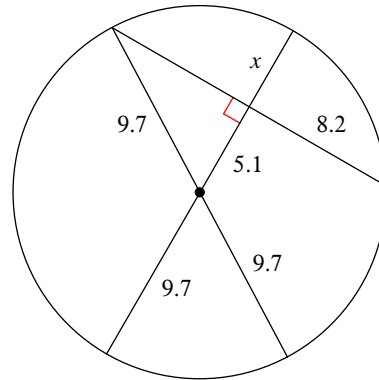
3

3)



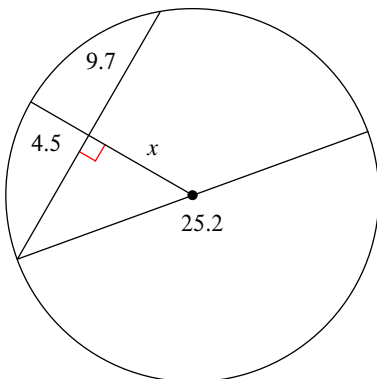
8.9

4)



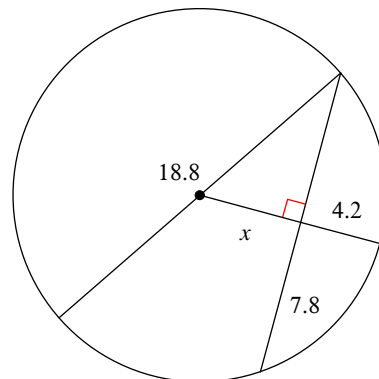
4.6

5)



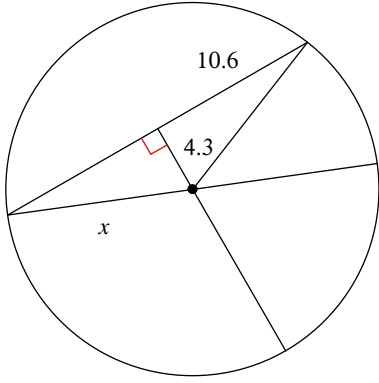
8.1

6)



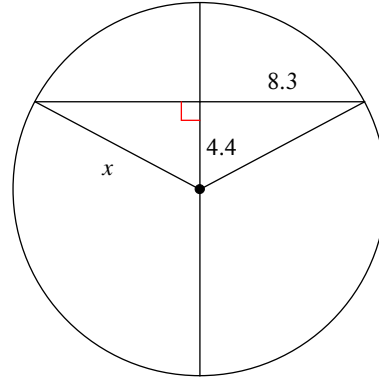
5.2

7)



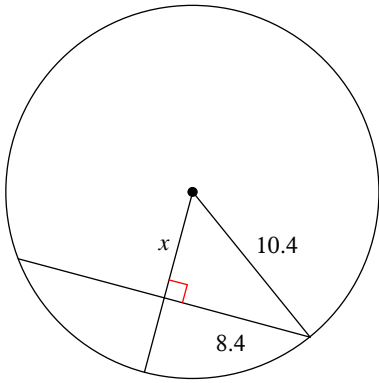
11.4

8)



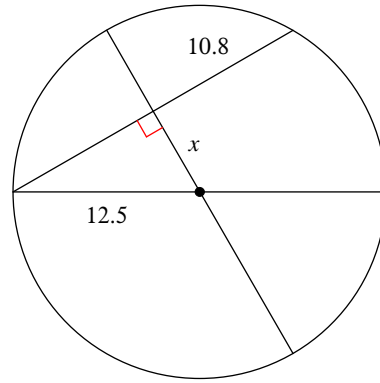
9.4

9)



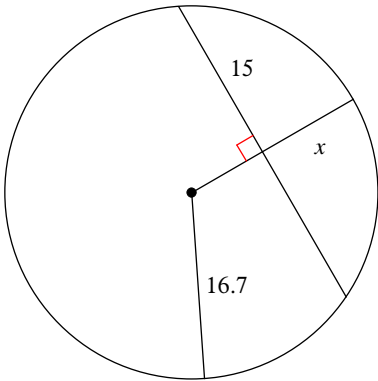
6.1

10)



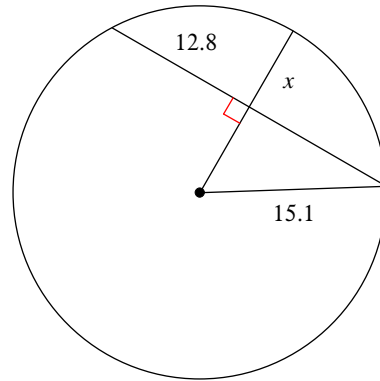
6.3

11)



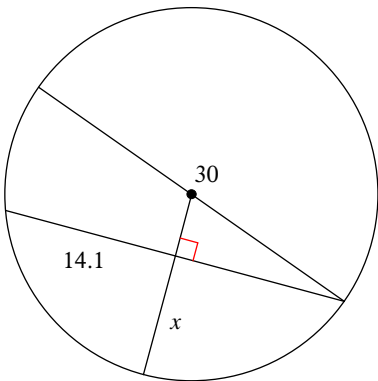
9.4

12)



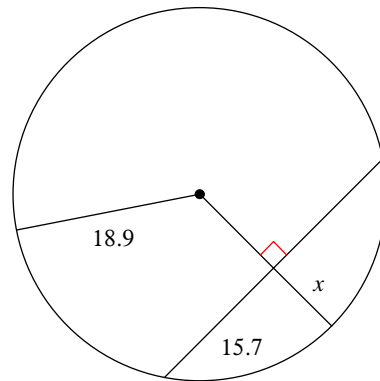
7.1

13)



9.9

14)



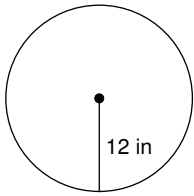
8.4

Circumference and Area of Circles

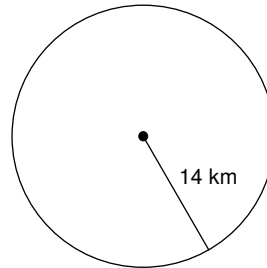
Date _____ Period _____

Find the area of each. Use your calculator's value of π . Round your answer to the nearest tenth.

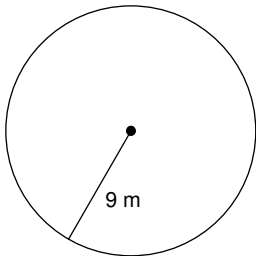
1)



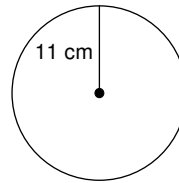
2)



3)



4)



5) radius = 2.6 in

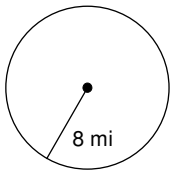
6) radius = 34.1 in

7) radius = 13.2 km

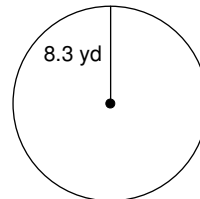
8) radius = 29.9 km

Find the circumference of each circle. Use your calculator's value of π . Round your answer to the nearest tenth.

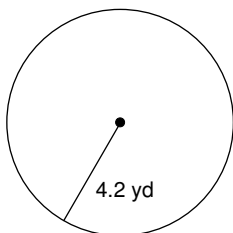
9)



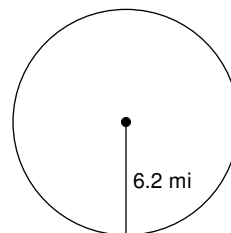
10)



11)



12)



13) radius = 5.2 ft

14) radius = 11.1 ft

15) radius = 9.5 in

16) radius = 9.3 in

Find the radius of each circle. Use your calculator's value of π . Round your answer to the nearest tenth.

17) circumference = 62.8 mi

18) circumference = 69.1 yd

19) circumference = 12.6 yd

20) circumference = 25.1 ft

Find the diameter of each circle. Use your calculator's value of π . Round your answer to the nearest tenth.

21) area = 201.1 in²

22) area = 78.5 ft²

23) area = 254.5 in²

24) area = 314.2 in²

Find the circumference of each circle.

25) area = 64π mi²

26) area = 16π in²

Find the area of each.

27) circumference = 6π yd

28) circumference = 22π in

Critical thinking question:

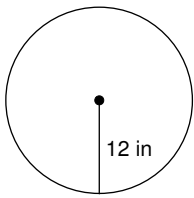
29) Find the radius of a circle so that its area and circumference have the same value.

Circumference and Area of Circles

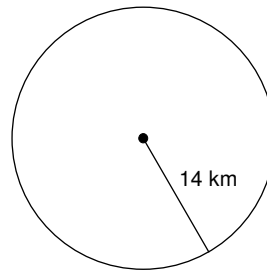
Date _____ Period _____

Find the area of each. Use your calculator's value of π . Round your answer to the nearest tenth.

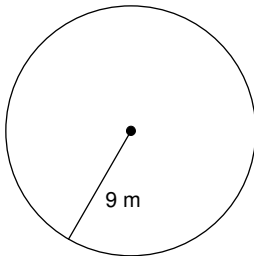
1) 452.4 in^2



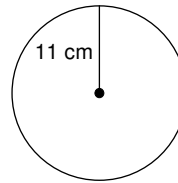
2) 615.8 km^2



3) 254.5 m^2



4) 380.1 cm^2



5) radius = 2.6 in

21.2 in^2

6) radius = 34.1 in

3653.1 in^2

7) radius = 13.2 km

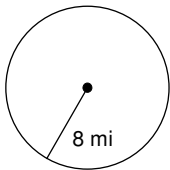
547.4 km^2

8) radius = 29.9 km

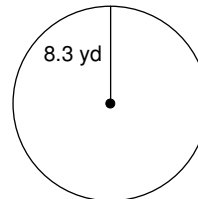
2808.6 km^2

Find the circumference of each circle. Use your calculator's value of π . Round your answer to the nearest tenth.

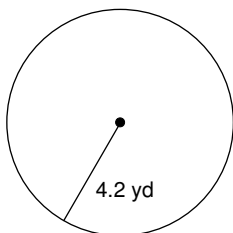
9) 50.3 mi



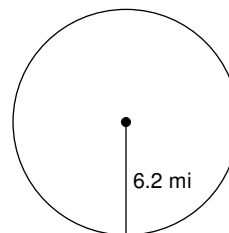
10) 52.2 yd



11) 26.4 yd



12) 39 mi



13) radius = 5.2 ft

32.7 ft

14) radius = 11.1 ft

69.7 ft

15) radius = 9.5 in

59.7 in

16) radius = 9.3 in

58.4 in

Find the radius of each circle. Use your calculator's value of π . Round your answer to the nearest tenth.

17) circumference = 62.8 mi

10 mi

18) circumference = 69.1 yd

11 yd

19) circumference = 12.6 yd

2 yd

20) circumference = 25.1 ft

4 ft

Find the diameter of each circle. Use your calculator's value of π . Round your answer to the nearest tenth.

21) area = 201.1 in²

16 in

22) area = 78.5 ft²

10 ft

23) area = 254.5 in²

18 in

24) area = 314.2 in²

20 in

Find the circumference of each circle.

25) area = 64π mi²

16π mi

26) area = 16π in²

8π in

Find the area of each.

27) circumference = 6π yd

9π yd²

28) circumference = 22π in

121π in²

Critical thinking question:

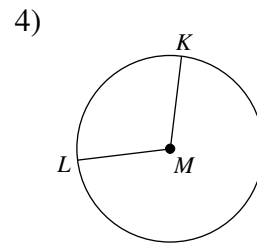
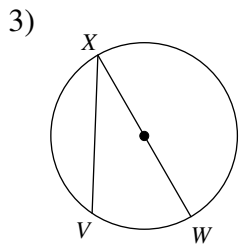
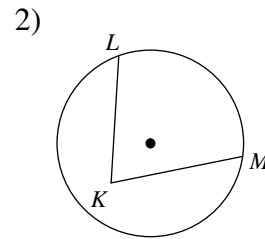
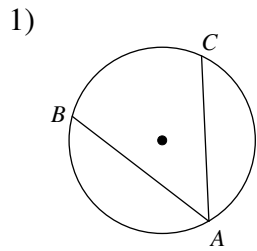
29) Find the radius of a circle so that its area and circumference have the same value.

$r = 2$

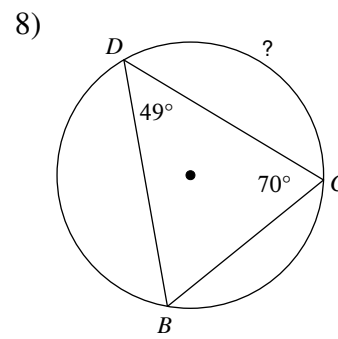
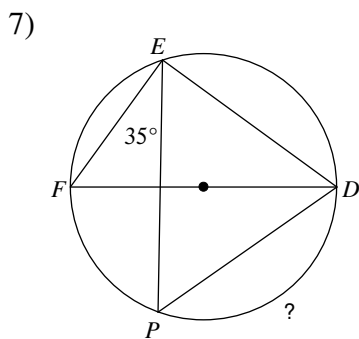
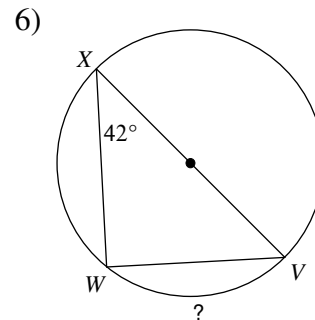
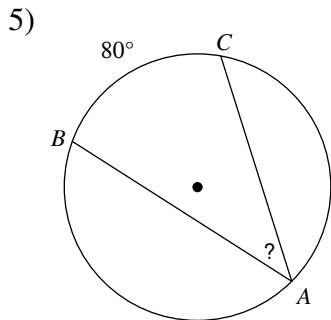
Inscribed Angles

Date _____ Period _____

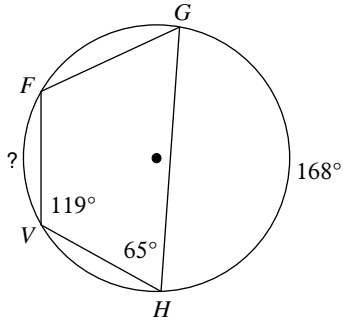
State if each angle is an inscribed angle. If it is, name the angle and the intercepted arc.



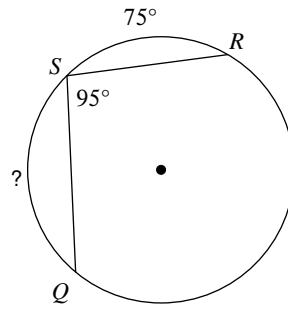
Find the measure of the arc or angle indicated.



9)

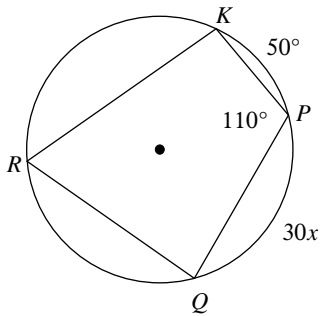


10)

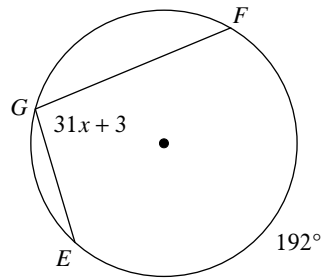


Solve for x .

11)

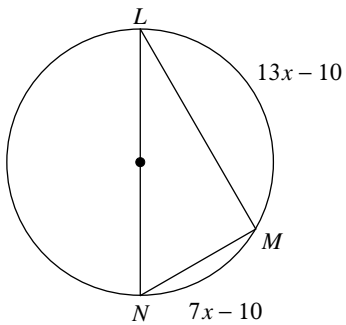


12)

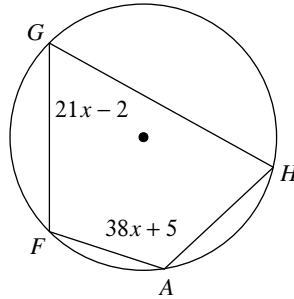


Find the measure of the arc or angle indicated.

13) Find $m\angle NLM$

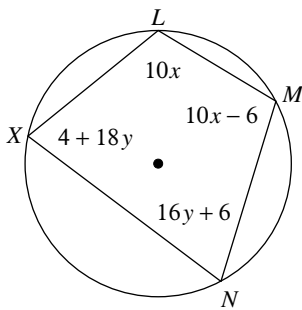


14) Find $m\widehat{FGH}$

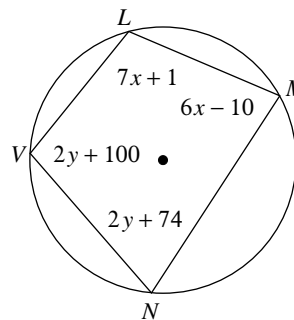


Solve for x and y .

15)



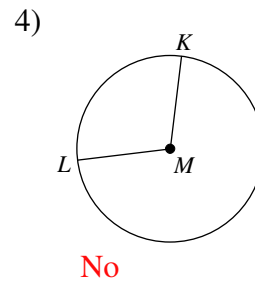
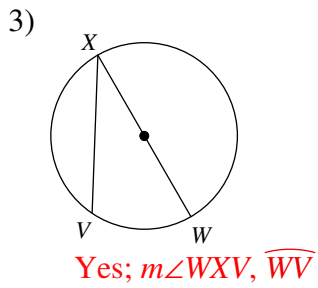
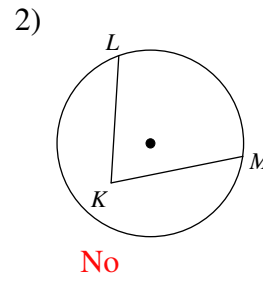
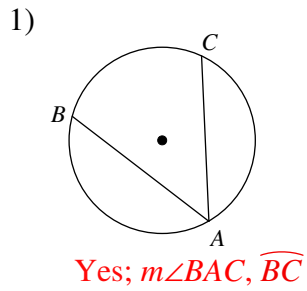
16)



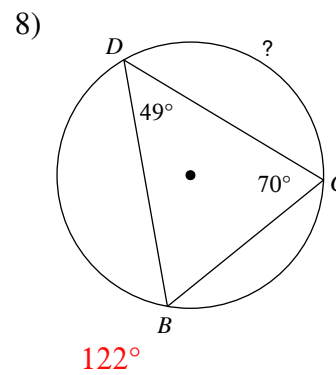
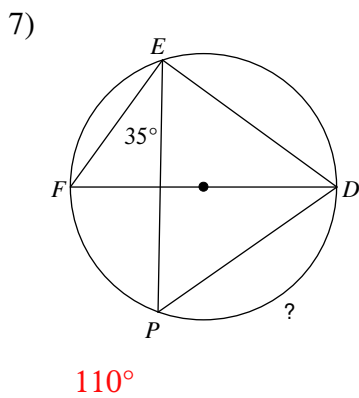
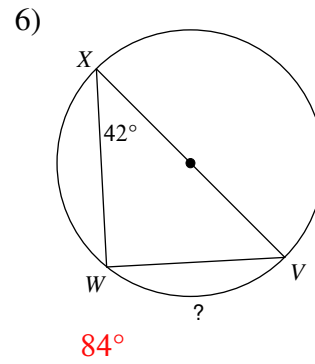
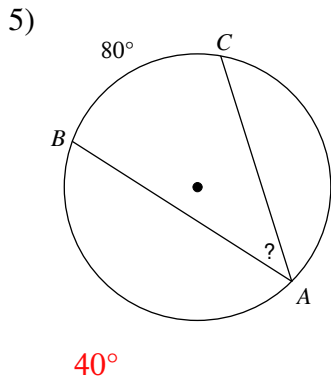
Inscribed Angles

Date _____ Period _____

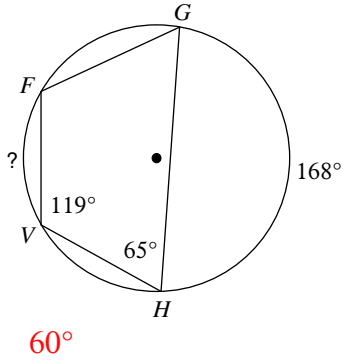
State if each angle is an inscribed angle. If it is, name the angle and the intercepted arc.



Find the measure of the arc or angle indicated.

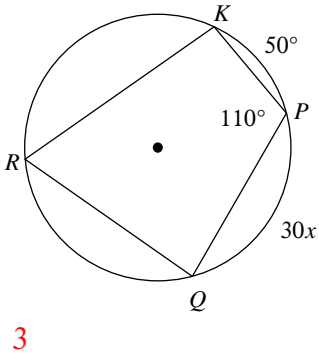


9)



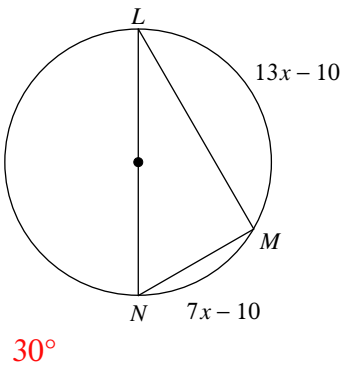
Solve for x .

11)



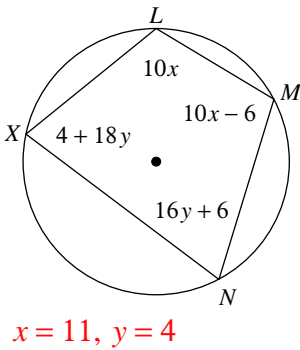
Find the measure of the arc or angle indicated.

13) Find $m\angle NLM$

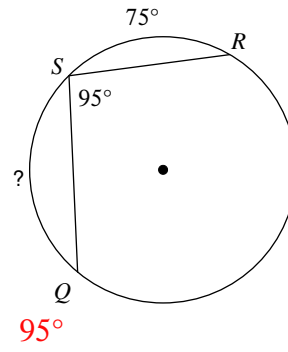


Solve for x and y .

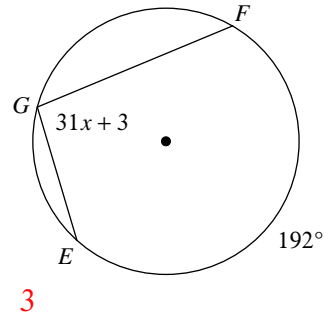
15)



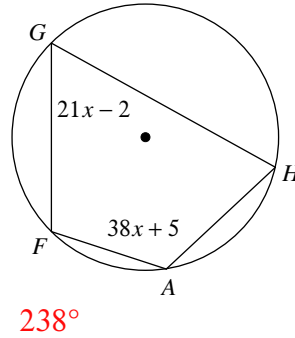
10)



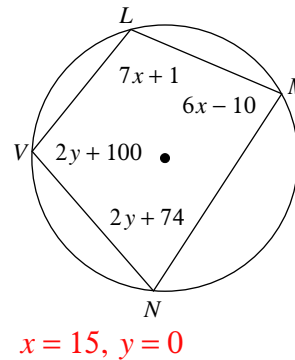
12)



14) Find $m\widehat{FGH}$



16)

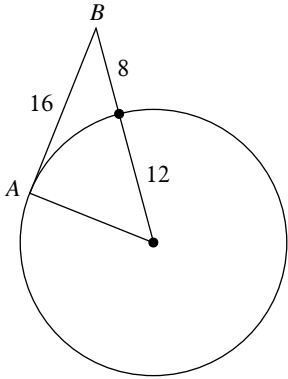


Tangents to Circles

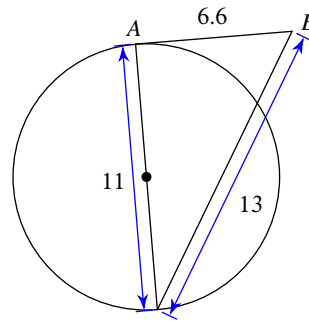
Date _____ Period _____

Determine if line AB is tangent to the circle.

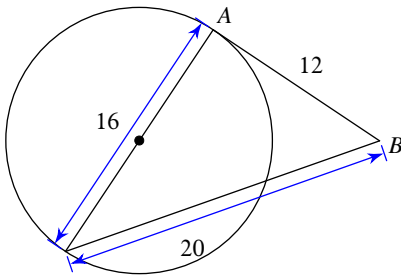
1)



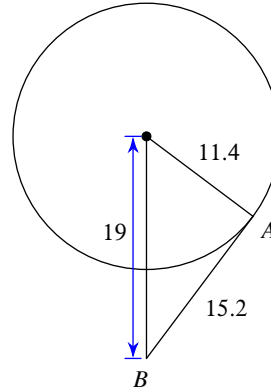
2)



3)

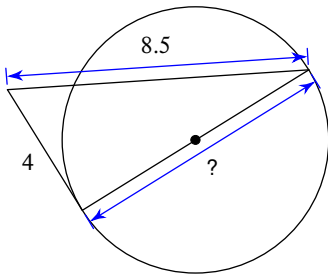


4)

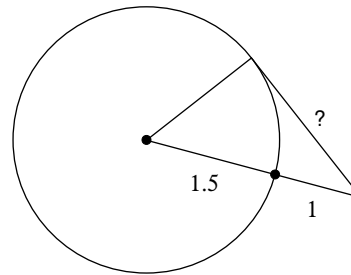


Find the segment length indicated. Assume that lines which appear to be tangent are tangent.

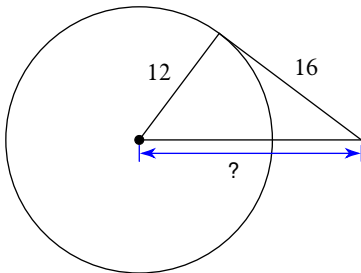
5)



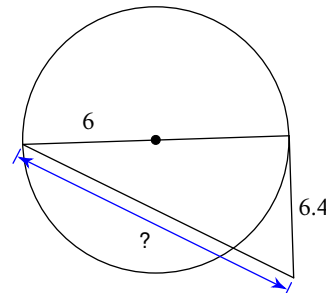
6)



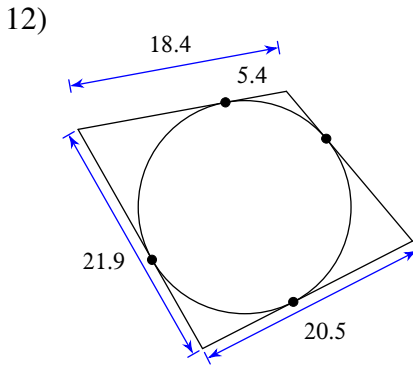
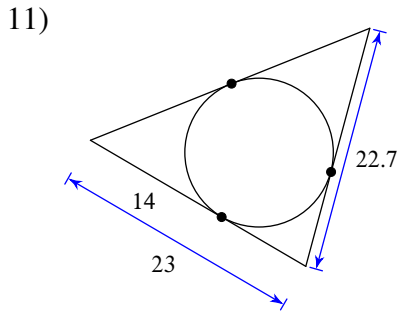
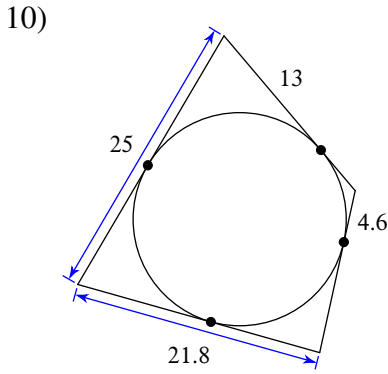
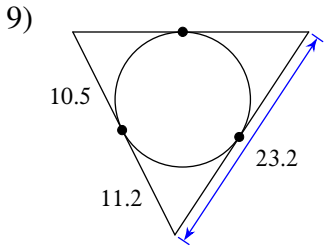
7)



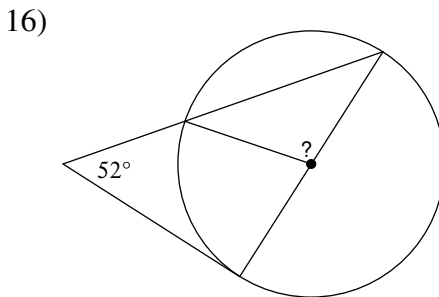
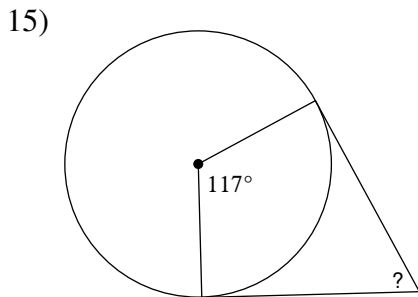
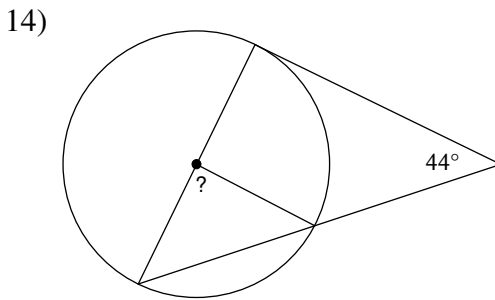
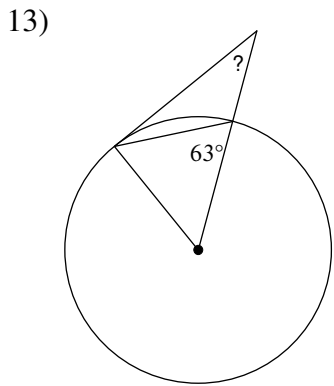
8)



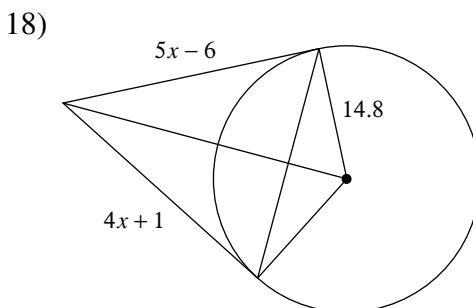
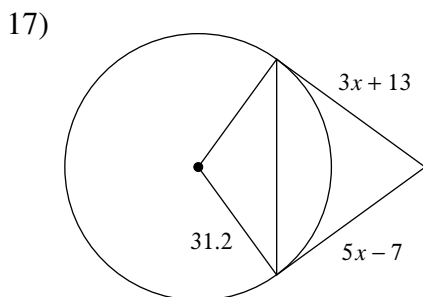
Find the perimeter of each polygon. Assume that lines which appear to be tangent are tangent.



Find the angle measure indicated. Assume that lines which appear to be tangent are tangent.



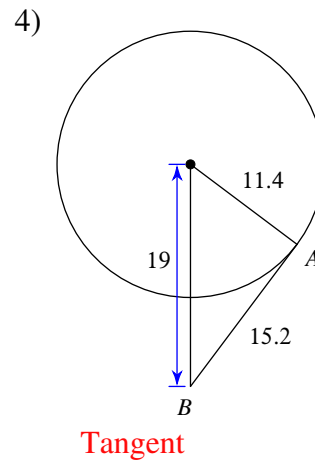
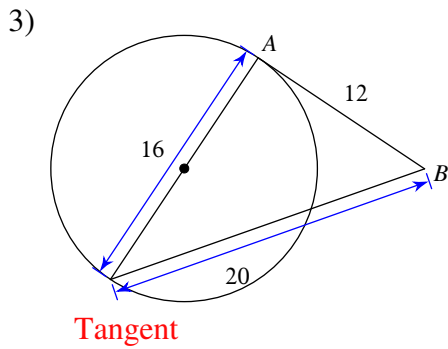
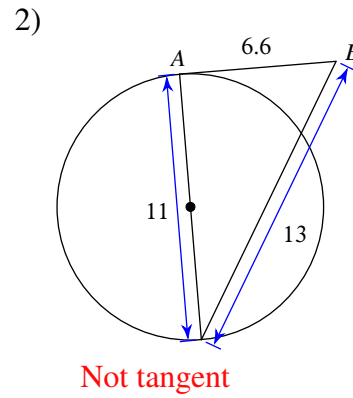
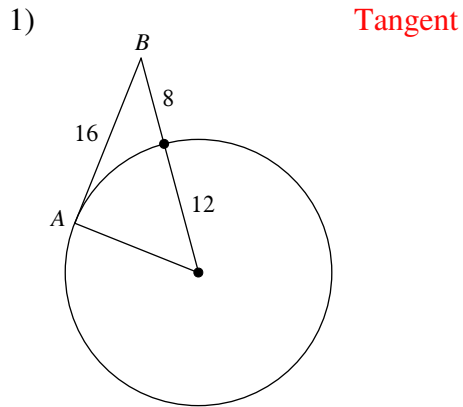
Solve for x . Assume that lines which appear to be tangent are tangent.



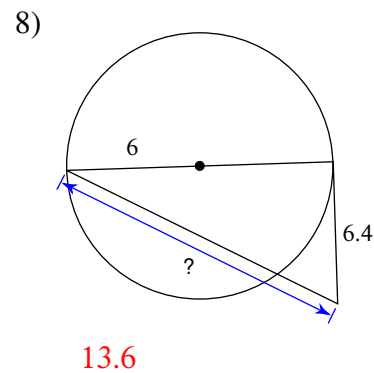
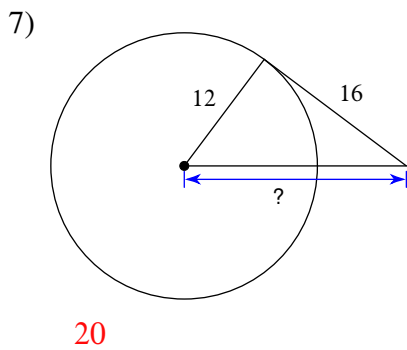
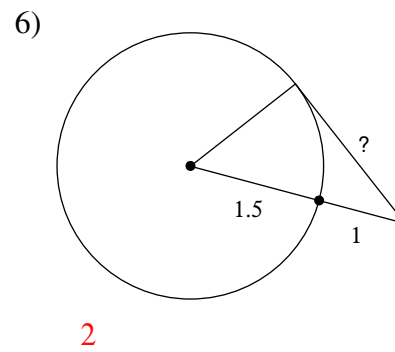
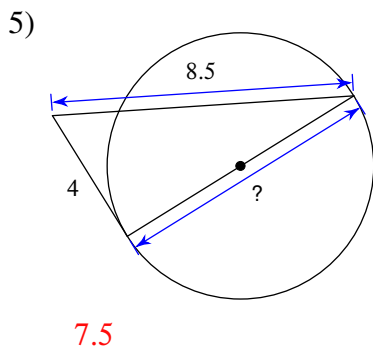
Tangents to Circles

Date _____ Period _____

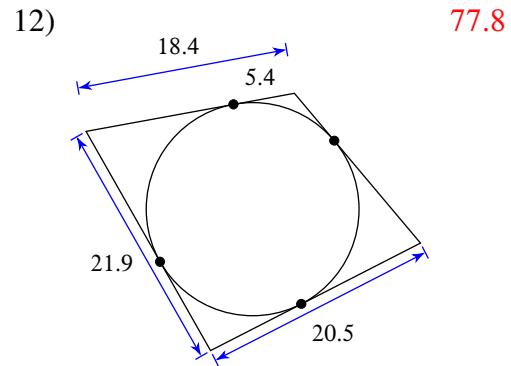
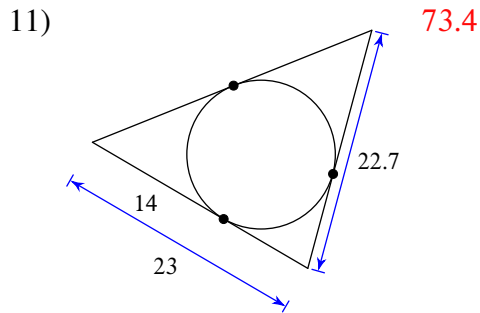
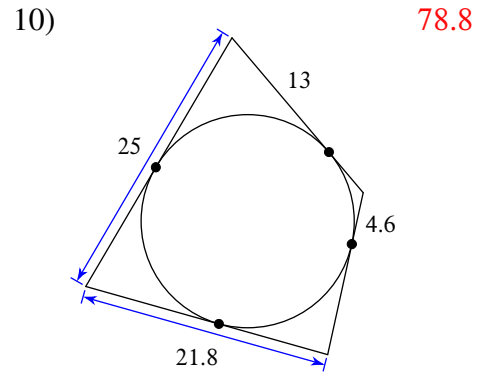
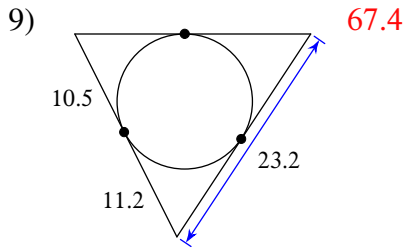
Determine if line AB is tangent to the circle.



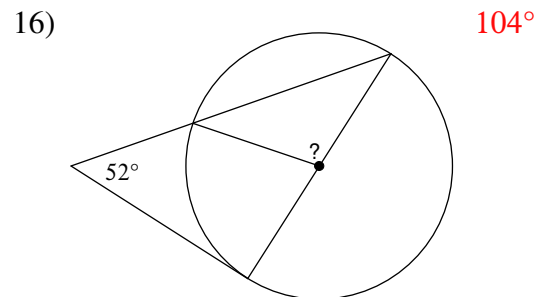
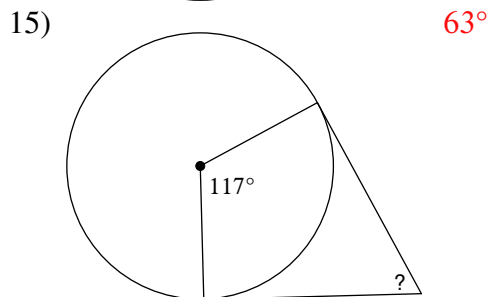
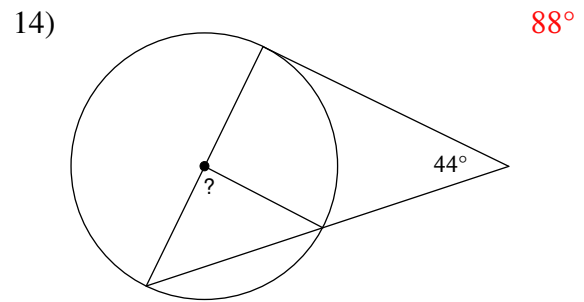
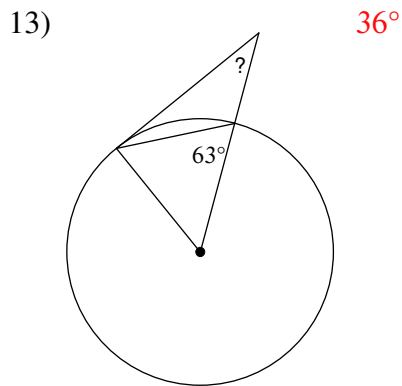
Find the segment length indicated. Assume that lines which appear to be tangent are tangent.



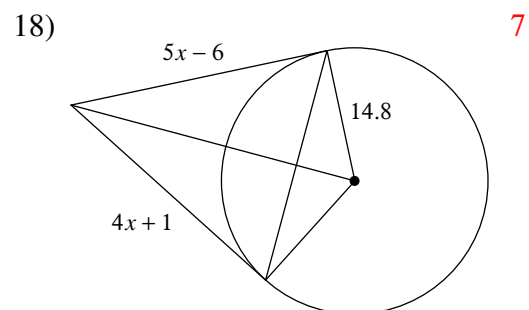
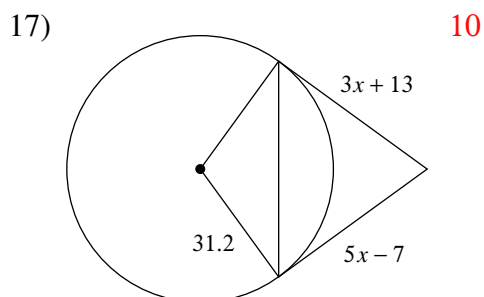
Find the perimeter of each polygon. Assume that lines which appear to be tangent are tangent.



Find the angle measure indicated. Assume that lines which appear to be tangent are tangent.



Solve for x . Assume that lines which appear to be tangent are tangent.

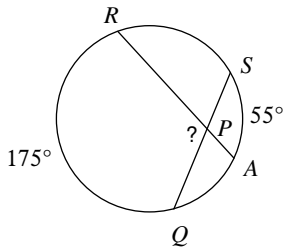


Secant Angles

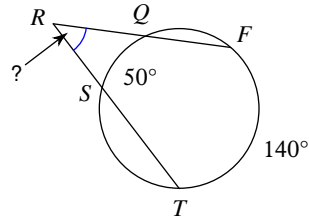
Date _____ Period _____

Find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.

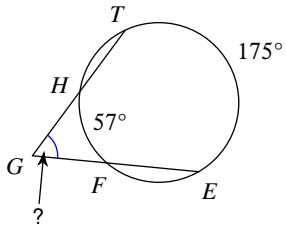
1)



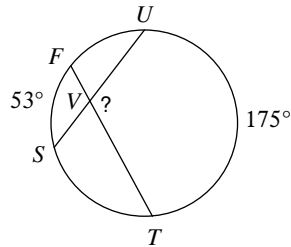
2)



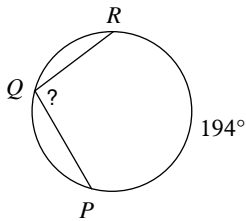
3)



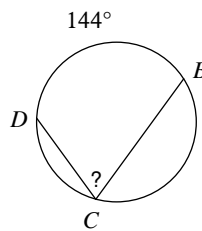
4)



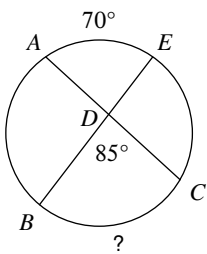
5)



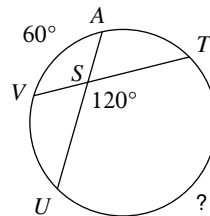
6)



7)

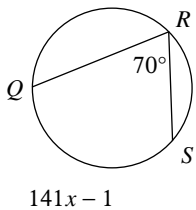


8)

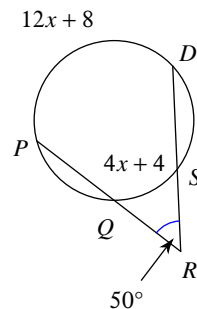


Solve for x . Assume that lines which appear tangent are tangent.

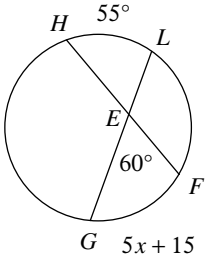
9)



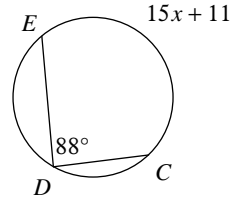
10)



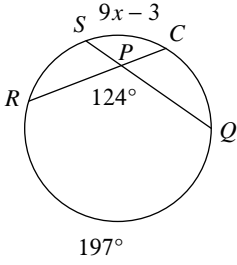
11)



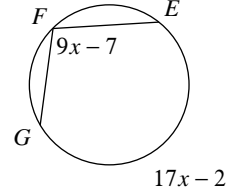
12)



13)

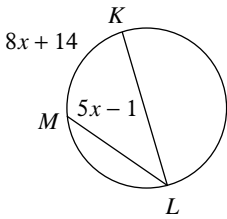


14)

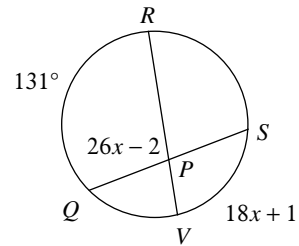


Find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.

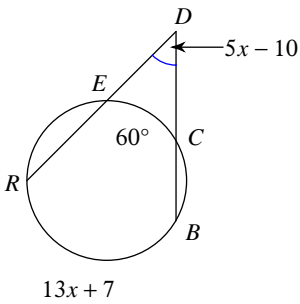
15) Find $m\widehat{KLM}$



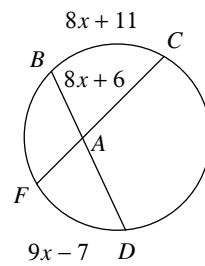
16) Find $m\angle QPR$



17) Find $m\widehat{RB}$



18) Find $m\widehat{BC}$

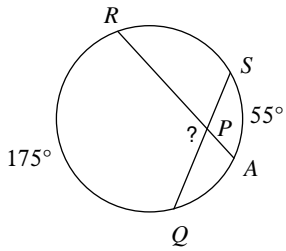


Secant Angles

Date _____ Period _____

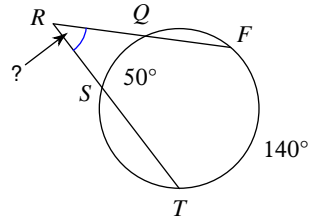
Find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.

1)



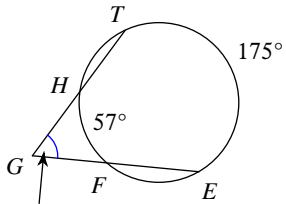
115°

2)



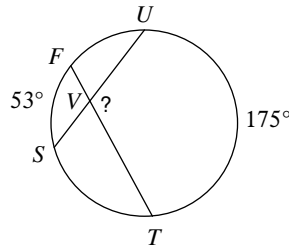
45°

3)



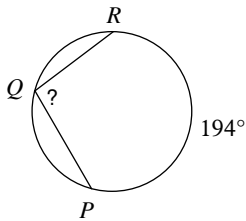
59°

4)



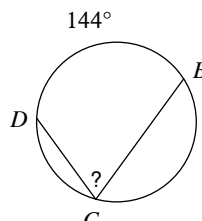
114°

5)



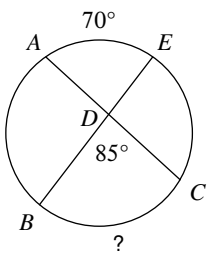
97°

6)



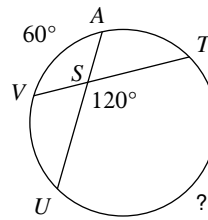
72°

7)



100°

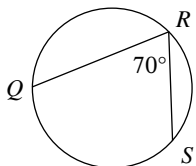
8)



180°

Solve for x . Assume that lines which appear tangent are tangent.

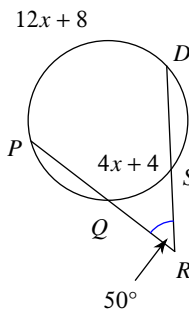
9)



141x - 1

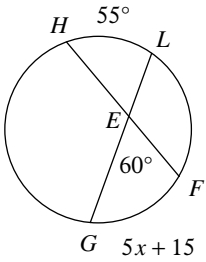
1

10)



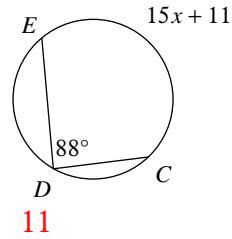
12

11)



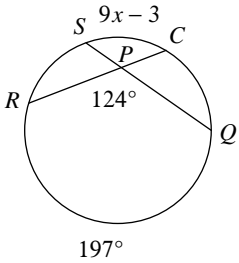
10

12)



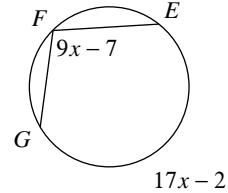
11

13)



6

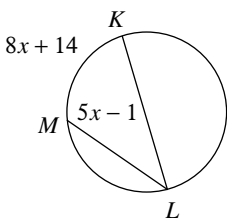
14)



12

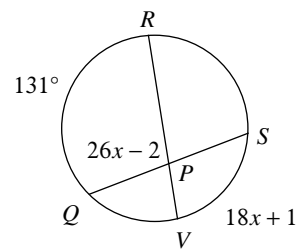
Find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.

15) Find $m\widehat{KLM}$



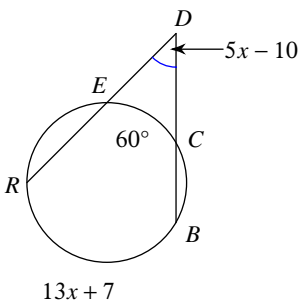
282°

16) Find $m\angle QPR$



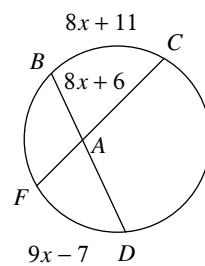
102°

17) Find $m\widehat{RB}$



150°

18) Find $m\widehat{BC}$

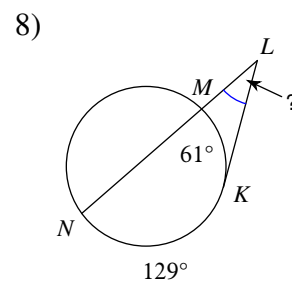
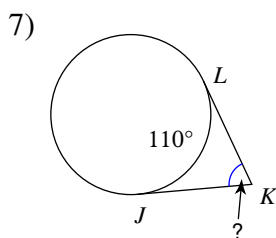
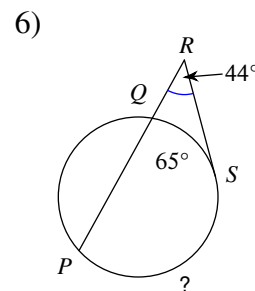
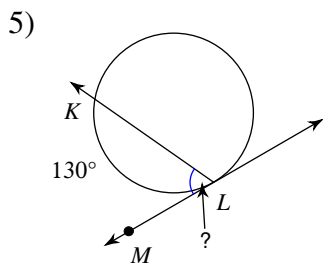
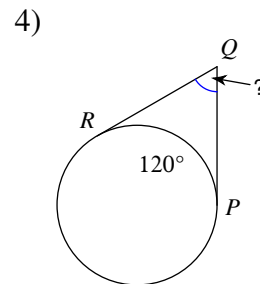
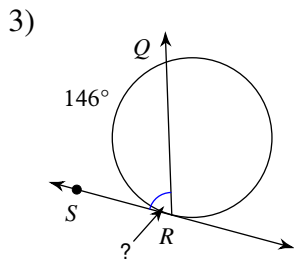
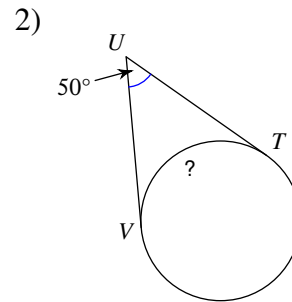
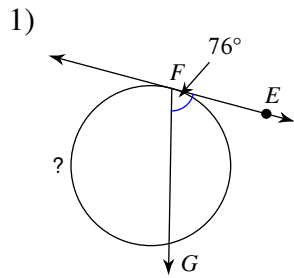


75°

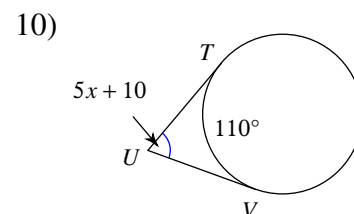
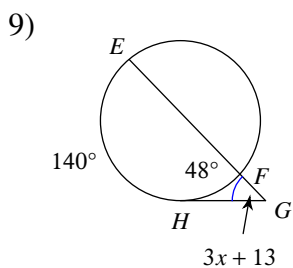
Secant-Tangent and Tangent-Tangent Angles

Date _____ Period _____

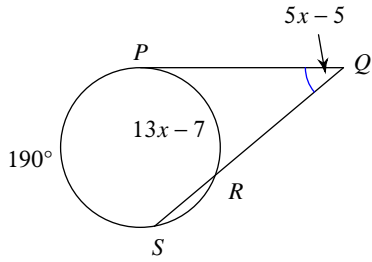
Find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.



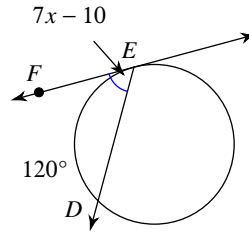
Solve for x . Assume that lines which appear tangent are tangent.



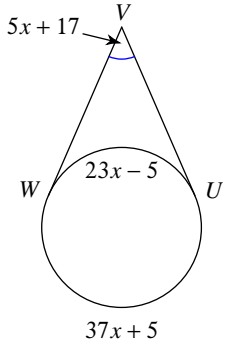
11)



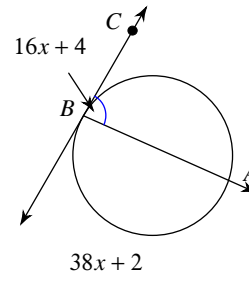
12)



13)

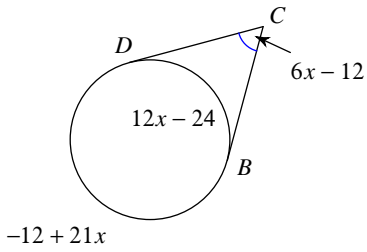


14)

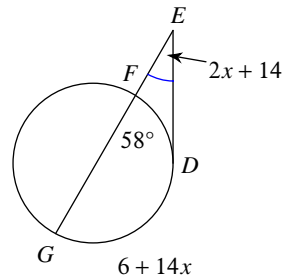


Find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.

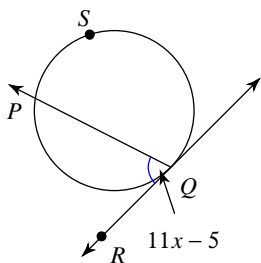
15) Find $m\widehat{BD}$



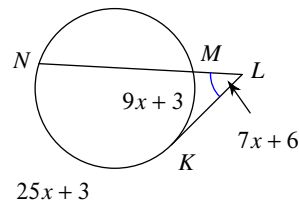
16) Find $m\angle DEG$



17) $m\widehat{PSQ} = 30x + 6$
Find $m\widehat{PSQ}$



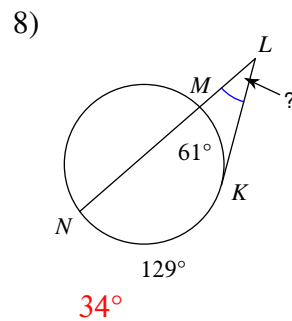
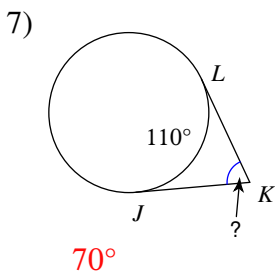
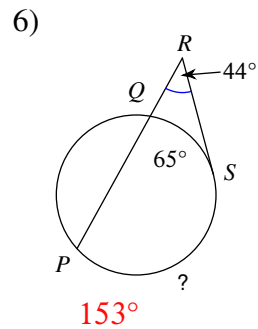
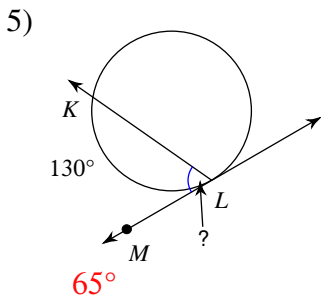
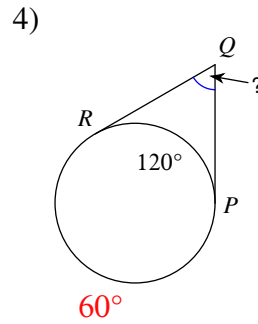
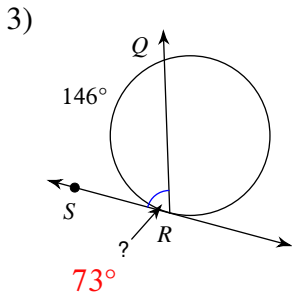
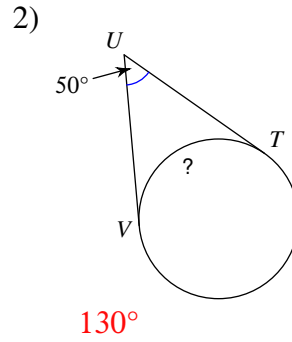
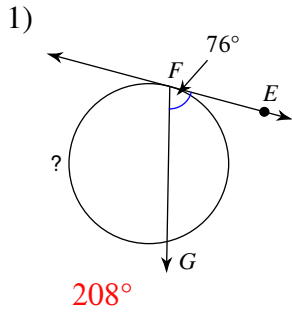
18) Find $m\widehat{NK}$



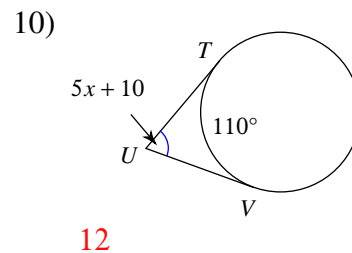
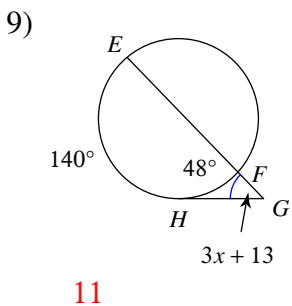
Secant-Tangent and Tangent-Tangent Angles

Date _____ Period _____

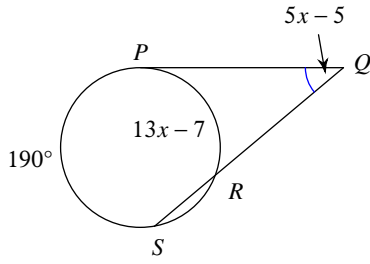
Find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.



Solve for x . Assume that lines which appear tangent are tangent.

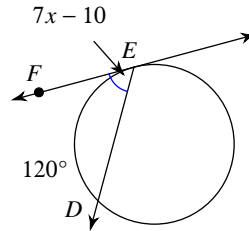


11)



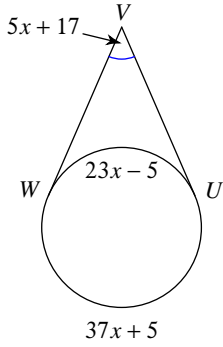
9

12)



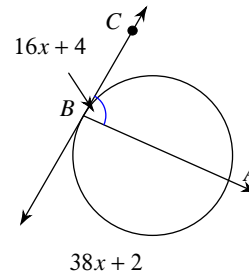
10

13)



6

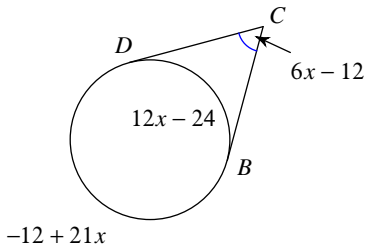
14)



5

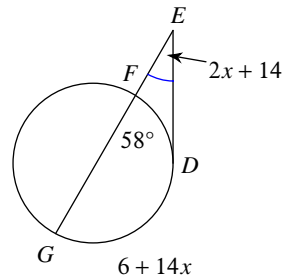
Find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.

15) Find $m\widehat{BD}$



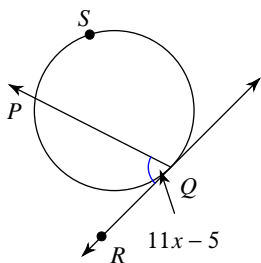
120°

16) Find $m\angle DEG$



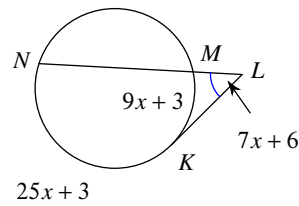
30°

17) $m\widehat{PSQ} = 30x + 6$
Find $m\widehat{PSQ}$



216°

18) Find $m\widehat{NK}$



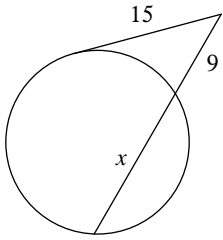
153°

Segment Lengths in Circles

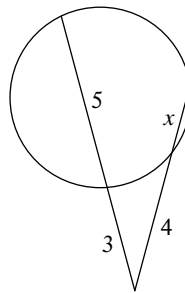
Date _____ Period _____

Solve for x . Assume that lines which appear tangent are tangent.

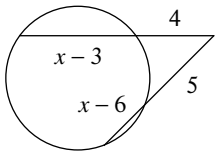
1)



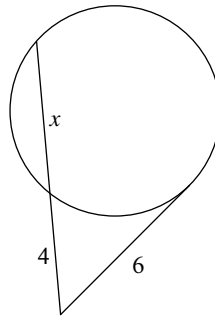
2)



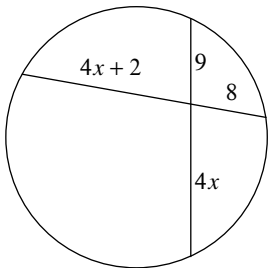
3)



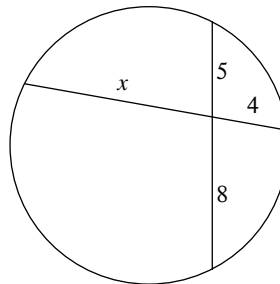
4)



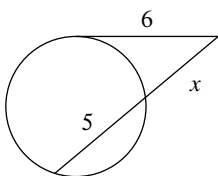
5)



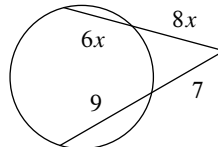
6)



7)

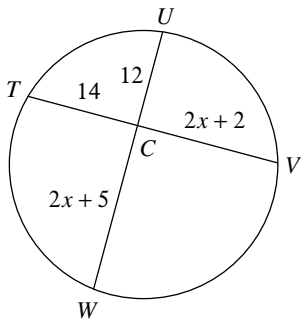


8)

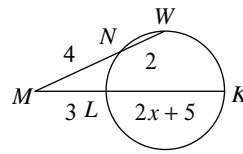


Find the measure of the line segment indicated. Assume that lines which appear tangent are tangent.

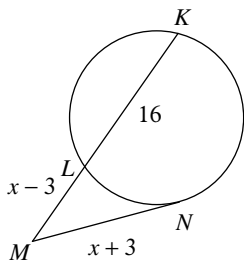
9) Find UW



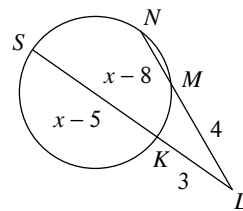
10) Find KM



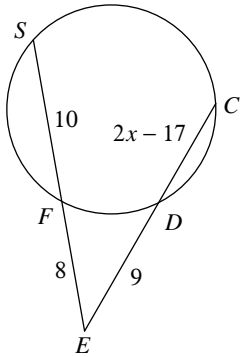
11) Find NM



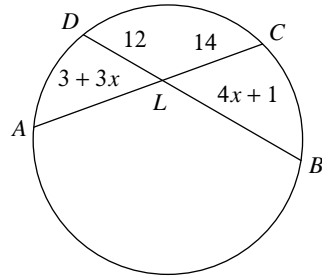
12) Find NL



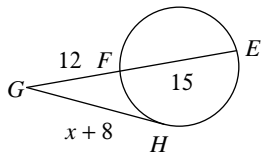
13) Find CE



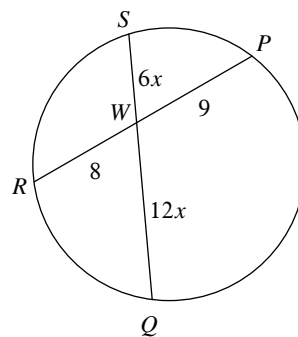
14) Find CA



15) Find HG



16) Find WS

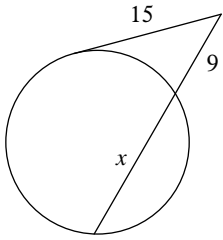


Segment Lengths in Circles

Date _____ Period _____

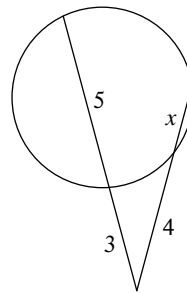
Solve for x . Assume that lines which appear tangent are tangent.

1)



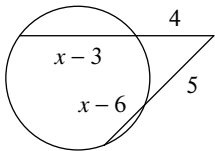
16

2)



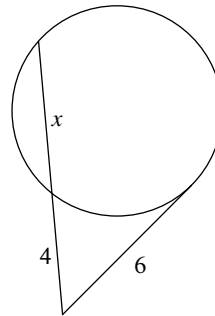
2

3)



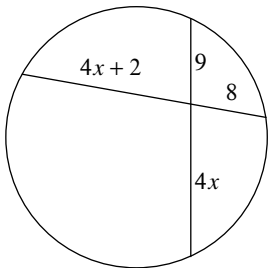
9

4)



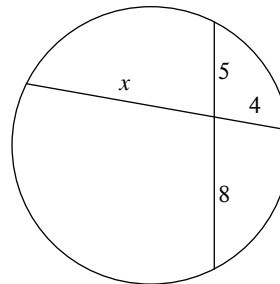
5

5)



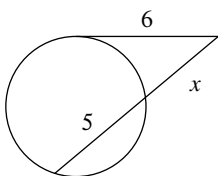
4

6)



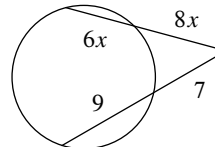
10

7)



4

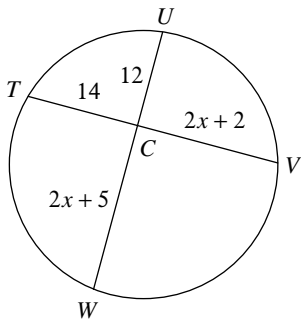
8)



1

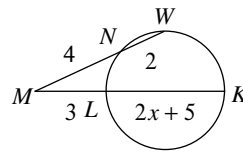
Find the measure of the line segment indicated. Assume that lines which appear tangent are tangent.

9) Find UW



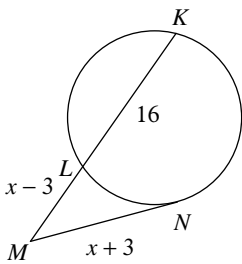
33

10) Find KM



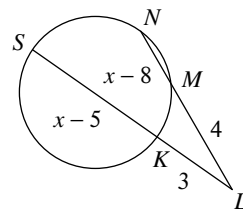
8

11) Find NM



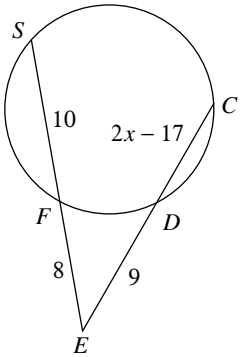
15

12) Find NL



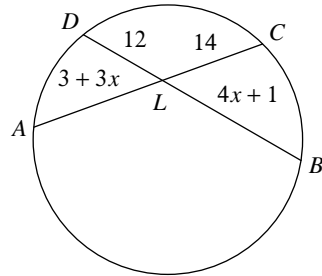
6

13) Find CE



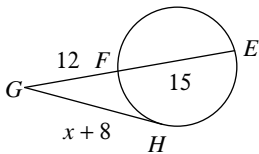
16

14) Find CA



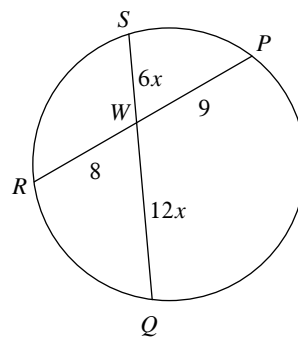
32

15) Find HG



18

16) Find WS



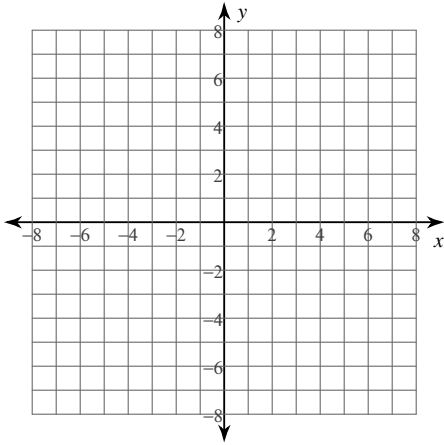
6

Equations of Circles

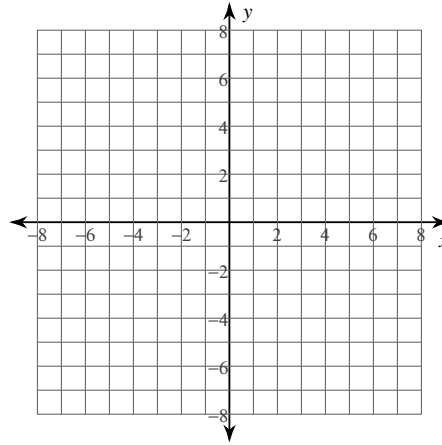
Date _____ Period _____

Identify the center and radius of each. Then sketch the graph.

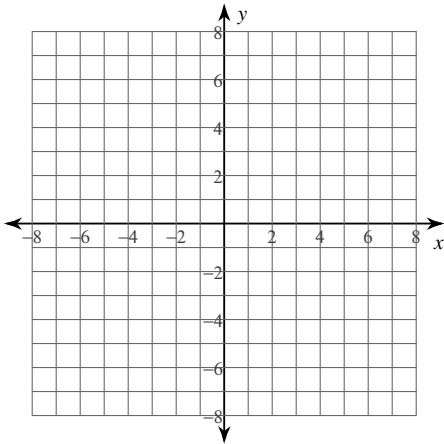
1) $(x - 1)^2 + (y + 3)^2 = 4$



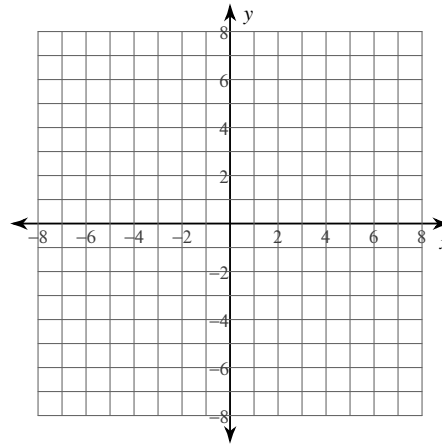
2) $(x - 2)^2 + (y + 1)^2 = 16$



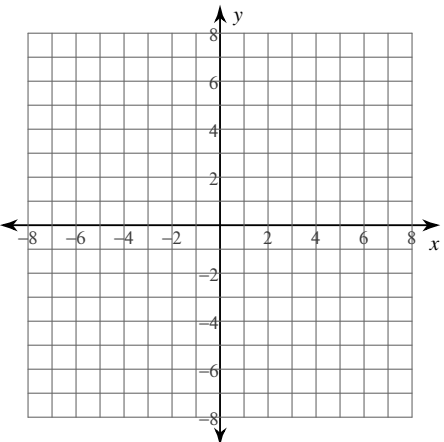
3) $(x - 1)^2 + (y + 4)^2 = 9$



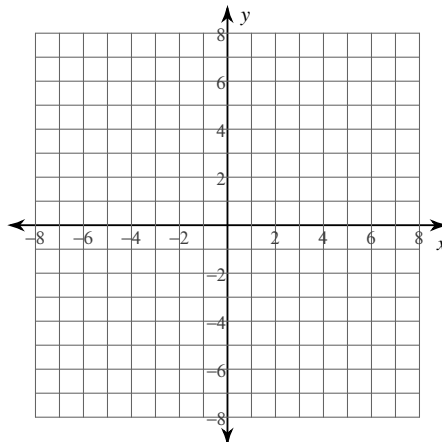
4) $x^2 + (y - 3)^2 = 14$



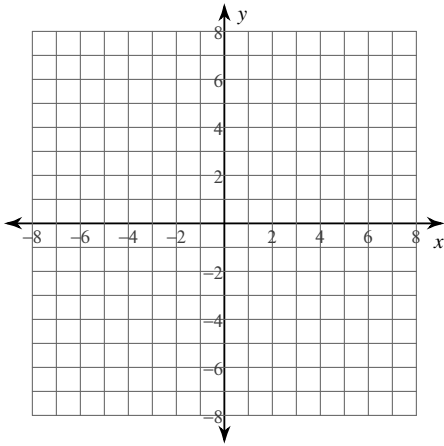
5) $y^2 + 4x - 20 - 2y = -x^2$



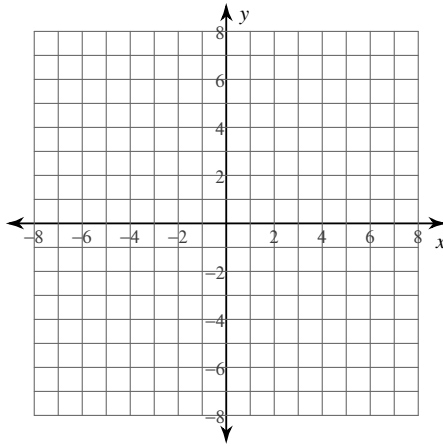
6) $-9 = -y^2 - x^2$



7) $9 = 2y - y^2 - 6x - x^2$



8) $16 + x^2 + y^2 - 8x - 6y = 0$



Use the information provided to write the equation of each circle.

9) Center: $(13, -13)$
 Radius: 4

10) Center: $(-13, -16)$
 Point on Circle: $(-10, -16)$

11) Ends of a diameter: $(18, -13)$ and $(4, -3)$

12) Center: $(10, -14)$
 Tangent to $x = 13$

13) Center lies in the first quadrant
 Tangent to $x = 8$, $y = 3$, and $x = 14$

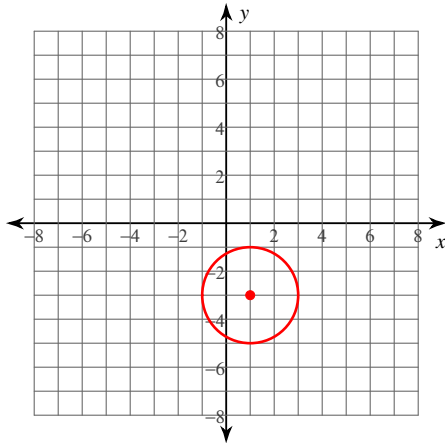
14) Center: $(0, 13)$
 Area: 25π

Equations of Circles

Date _____ Period _____

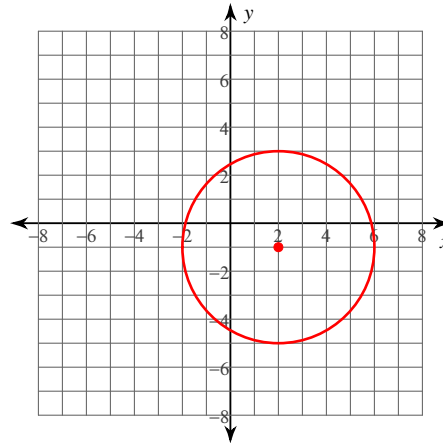
Identify the center and radius of each. Then sketch the graph.

1) $(x - 1)^2 + (y + 3)^2 = 4$



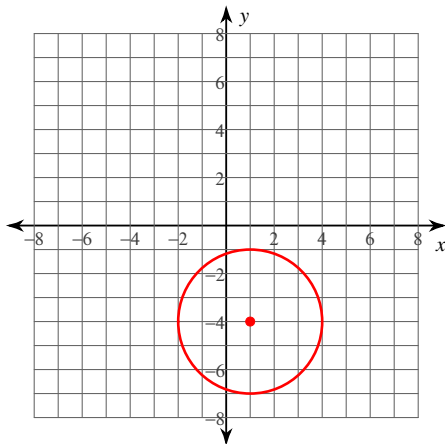
Center: (1, -3)
Radius: 2

2) $(x - 2)^2 + (y + 1)^2 = 16$



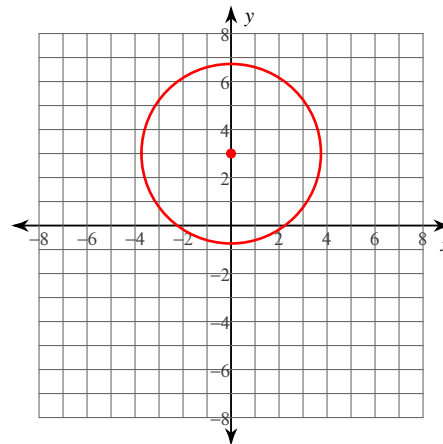
Center: (2, -1)
Radius: 4

3) $(x - 1)^2 + (y + 4)^2 = 9$



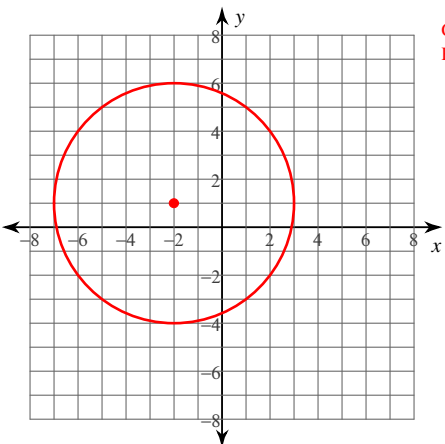
Center: (1, -4)
Radius: 3

4) $x^2 + (y - 3)^2 = 14$



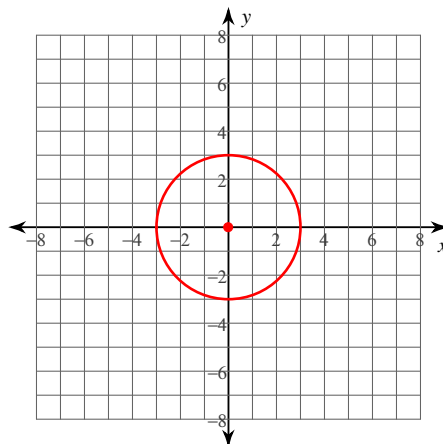
Center: (0, 3)
Radius: $\sqrt{14}$

5) $y^2 + 4x - 20 - 2y = -x^2$



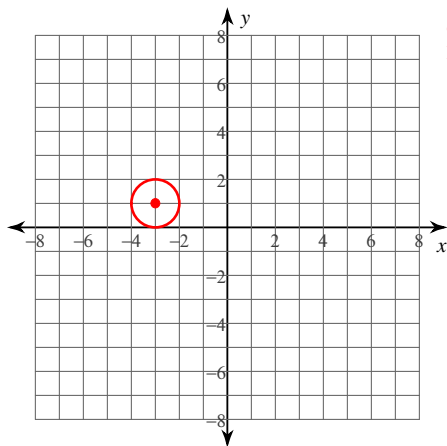
Center: (-2, 1)
Radius: 5

6) $-9 = -y^2 - x^2$



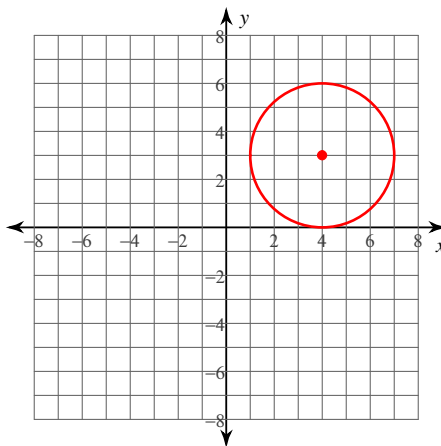
Center: (0, 0)
Radius: 3

$$7) 9 = 2y - y^2 - 6x - x^2$$



Center: $(-3, 1)$
Radius: 1

$$8) 16 + x^2 + y^2 - 8x - 6y = 0$$



Center: $(4, 3)$
Radius: 3

Use the information provided to write the equation of each circle.

9) Center: $(13, -13)$

Radius: 4

$$(x - 13)^2 + (y + 13)^2 = 16$$

10) Center: $(-13, -16)$

Point on Circle: $(-10, -16)$

$$(x + 13)^2 + (y + 16)^2 = 9$$

11) Ends of a diameter: $(18, -13)$ and $(4, -3)$

$$(x - 11)^2 + (y + 8)^2 = 74$$

12) Center: $(10, -14)$

Tangent to $x = 13$

$$(x - 10)^2 + (y + 14)^2 = 9$$

13) Center lies in the first quadrant

Tangent to $x = 8$, $y = 3$, and $x = 14$

$$(x - 11)^2 + (y - 6)^2 = 9$$

14) Center: $(0, 13)$

Area: 25π

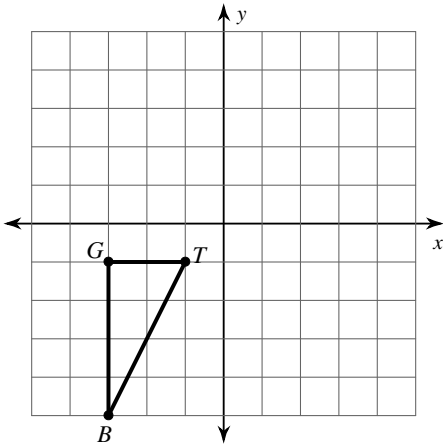
$$x^2 + (y - 13)^2 = 25$$

Translations

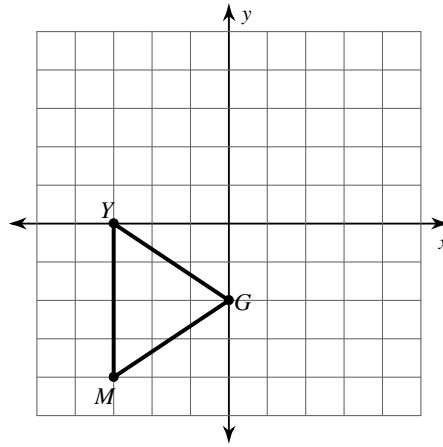
Date _____ Period _____

Graph the image of the figure using the transformation given.

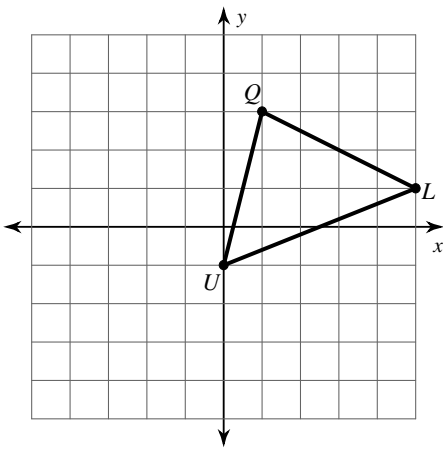
1) translation: 5 units right and 1 unit up



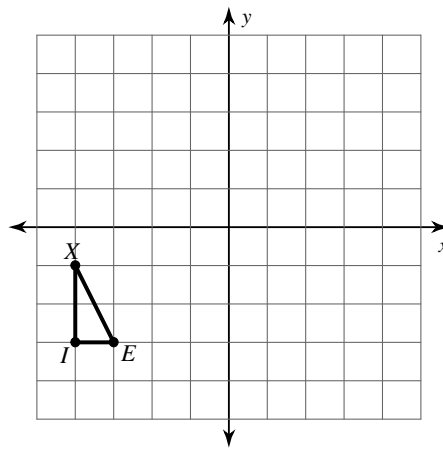
2) translation: 1 unit left and 2 units up



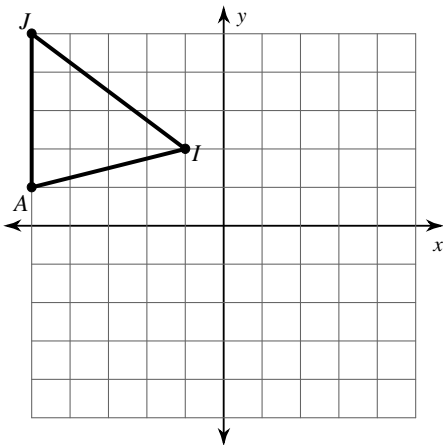
3) translation: 3 units down



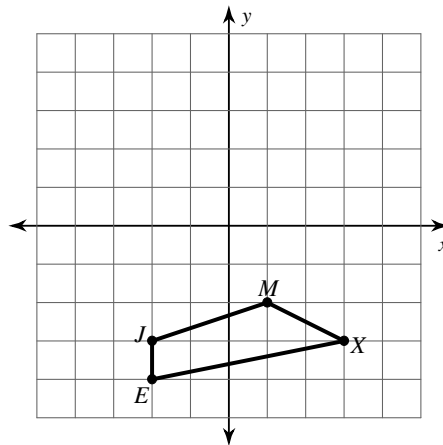
4) translation: 5 units right and 2 units up



5) translation: 4 units right and 4 units down

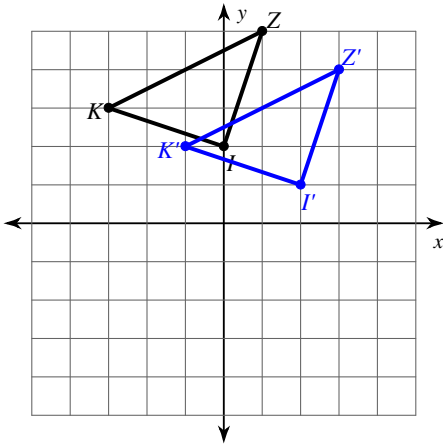


6) translation: 2 units right and 3 units up

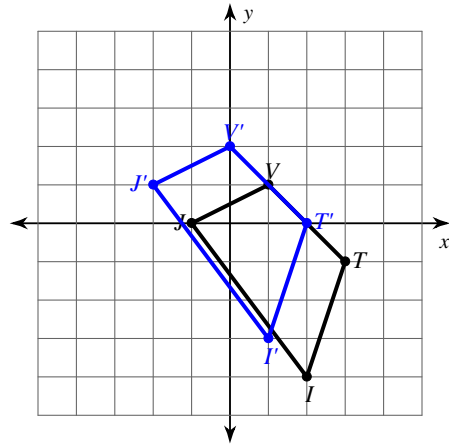


Write a rule to describe each transformation.

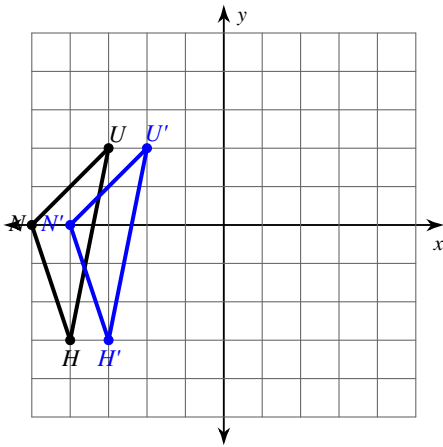
7)



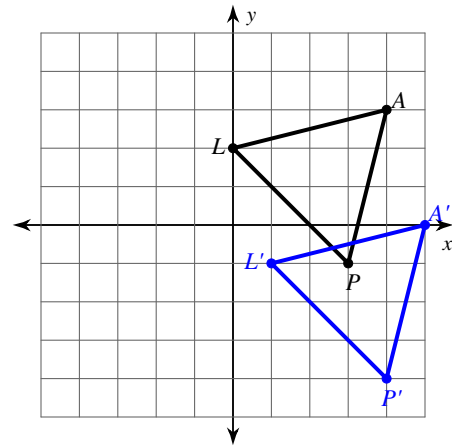
8)



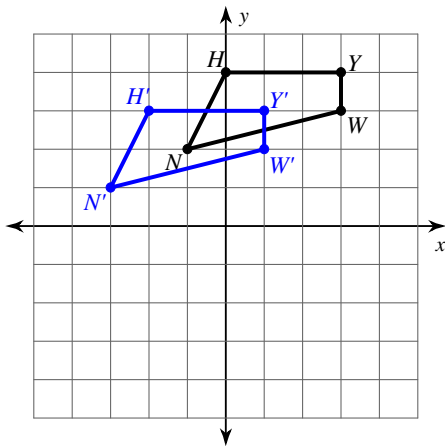
9)



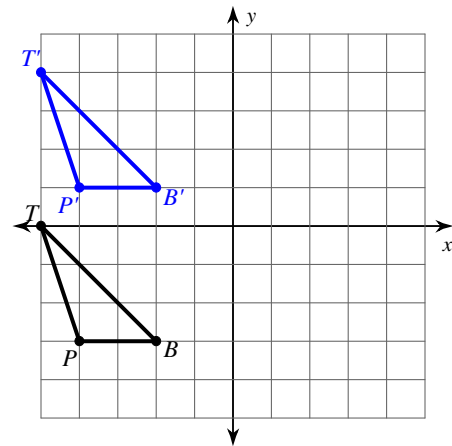
10)



11)



12)

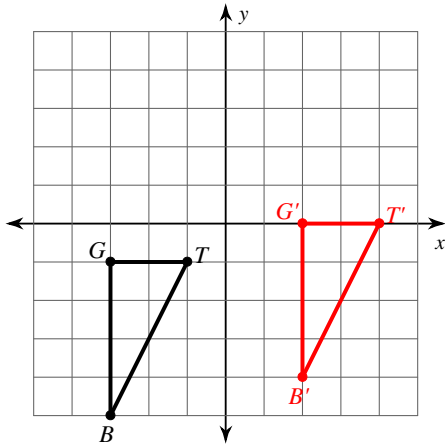


Translations

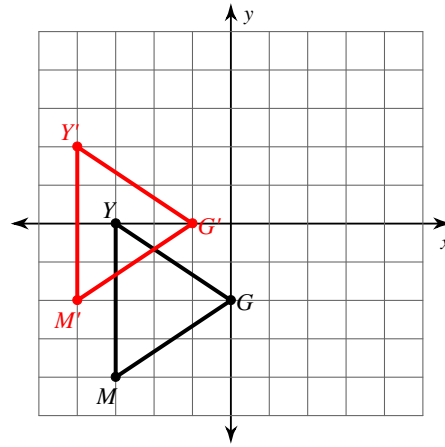
Date _____ Period _____

Graph the image of the figure using the transformation given.

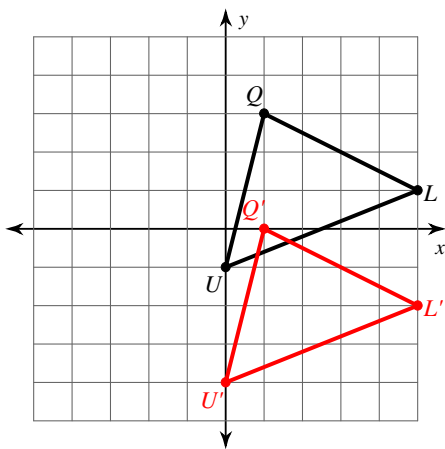
1) translation: 5 units right and 1 unit up



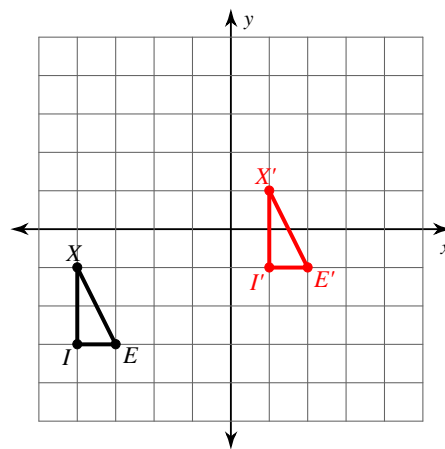
2) translation: 1 unit left and 2 units up



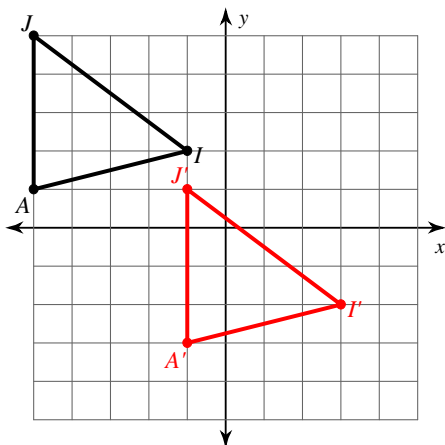
3) translation: 3 units down



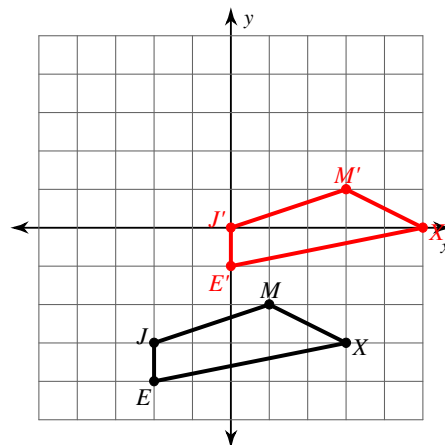
4) translation: 5 units right and 2 units up



5) translation: 4 units right and 4 units down

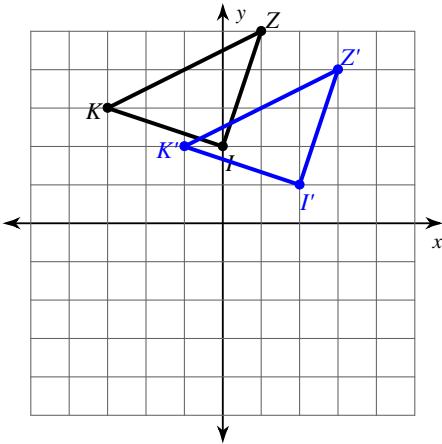


6) translation: 2 units right and 3 units up



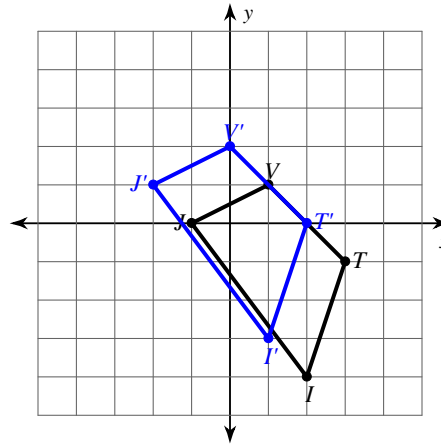
Write a rule to describe each transformation.

7)



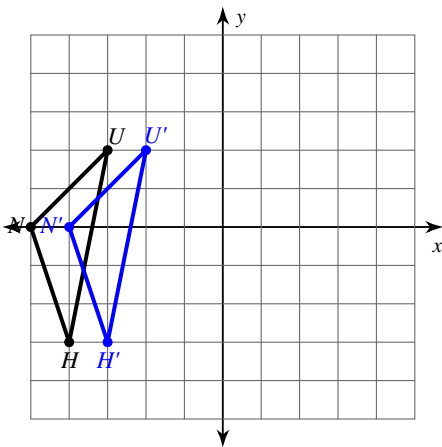
translation: 2 units right and 1 unit down

8)



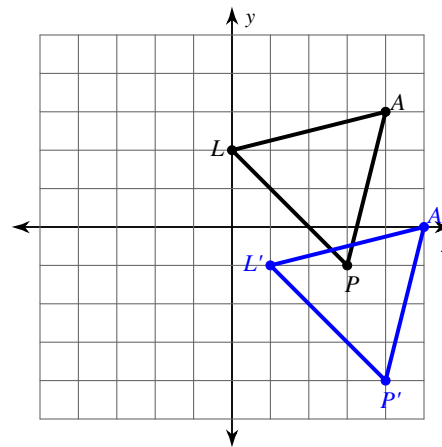
translation: 1 unit left and 1 unit up

9)



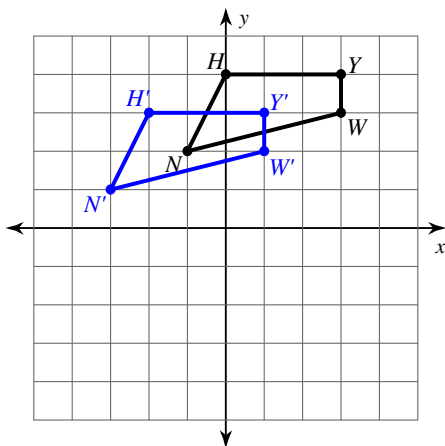
translation: 1 unit right

10)



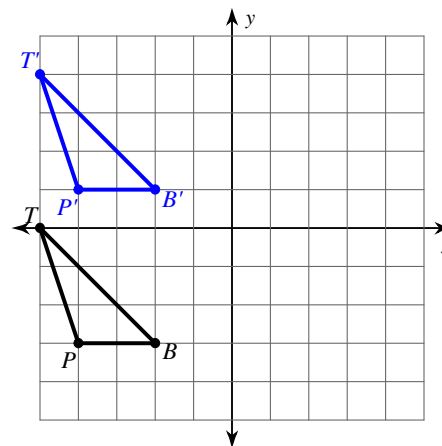
translation: 1 unit right and 3 units down

11)



translation: 2 units left and 1 unit down

12)



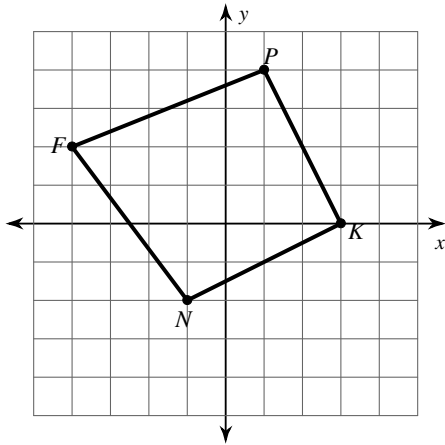
translation: 4 units up

Rotations

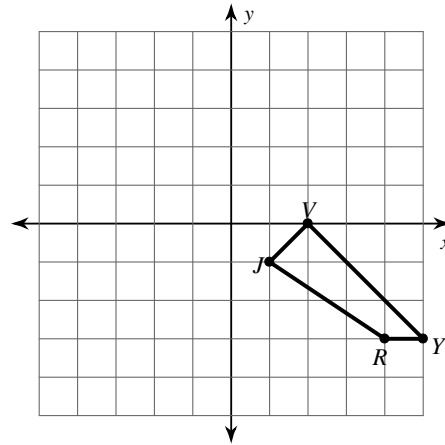
Date _____ Period _____

Graph the image of the figure using the transformation given.

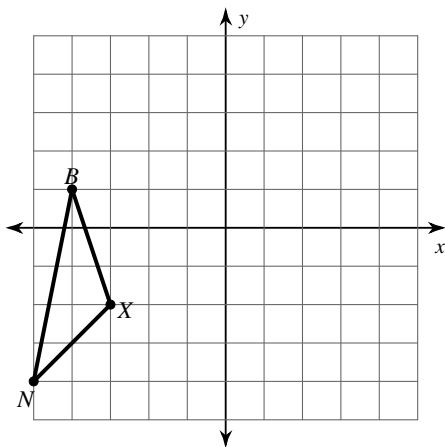
1) rotation 180° about the origin



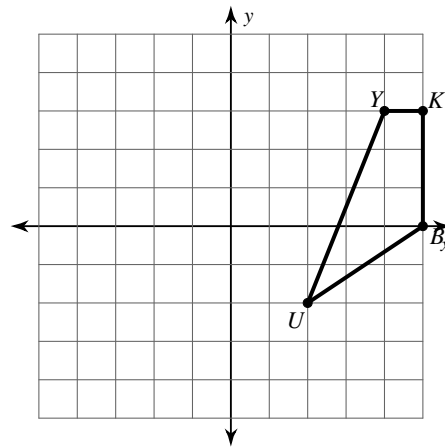
2) rotation 180° about the origin



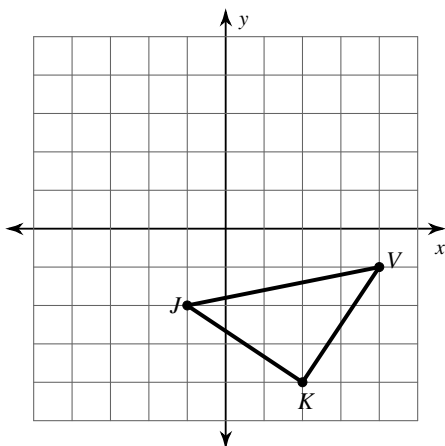
3) rotation 90° counterclockwise about the origin



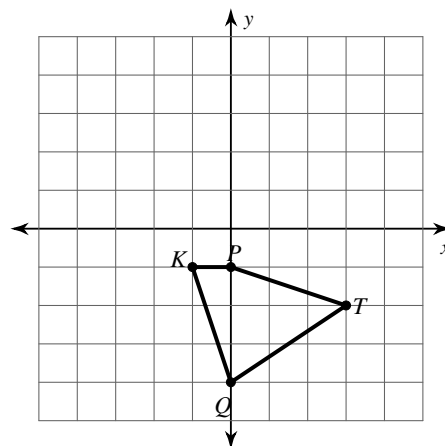
4) rotation 90° clockwise about the origin



5) rotation 90° clockwise about the origin

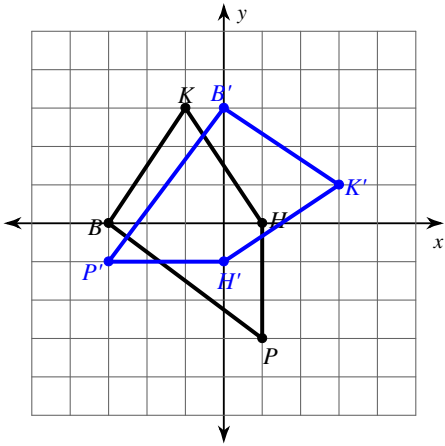


6) rotation 180° about the origin

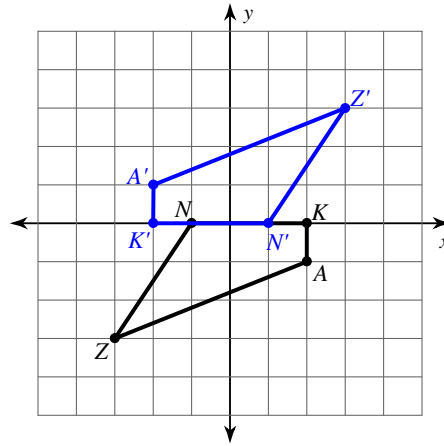


Write a rule to describe each transformation.

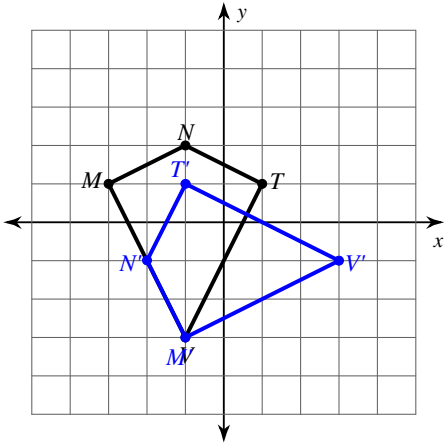
7)



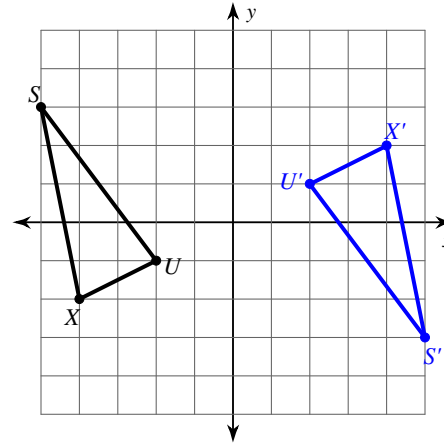
8)



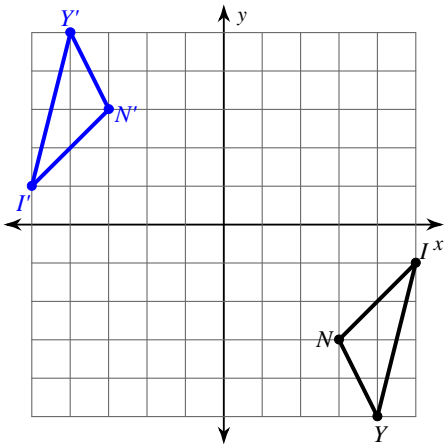
9)



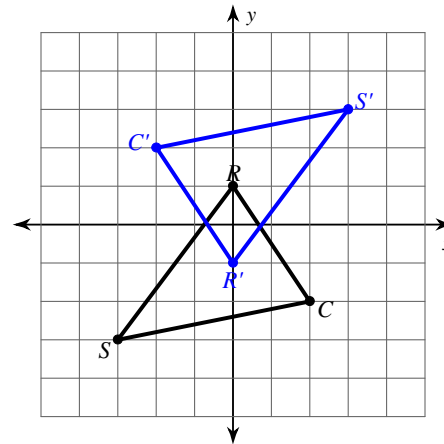
10)



11)



12)

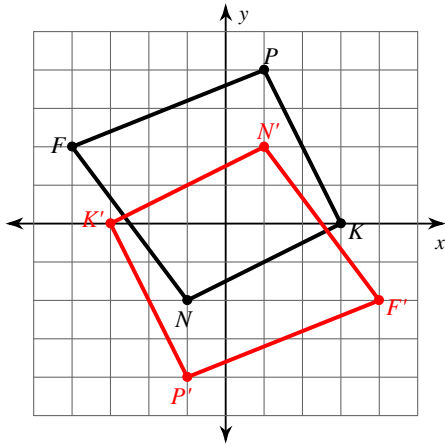


Rotations

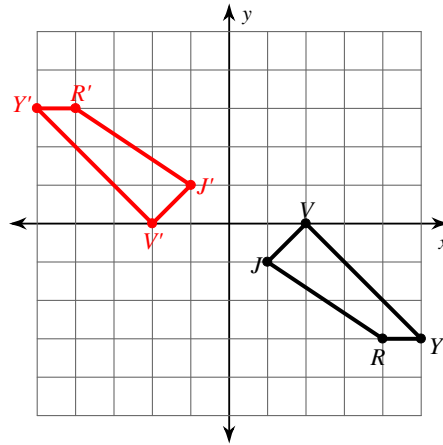
Date _____ Period _____

Graph the image of the figure using the transformation given.

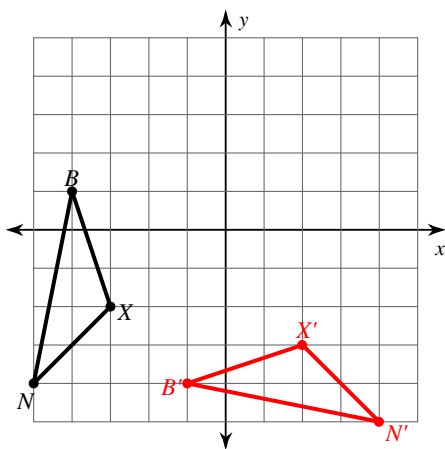
1) rotation 180° about the origin



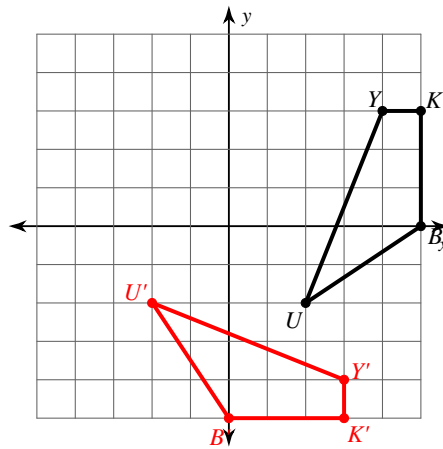
2) rotation 180° about the origin



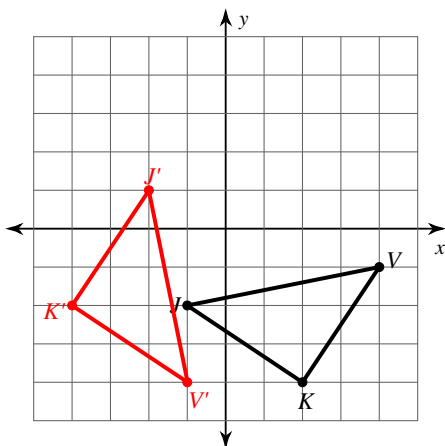
3) rotation 90° counterclockwise about the origin



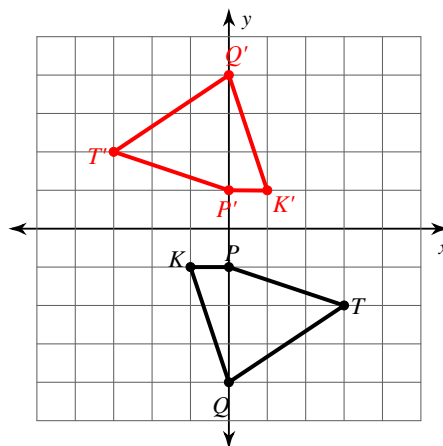
4) rotation 90° clockwise about the origin



5) rotation 90° clockwise about the origin

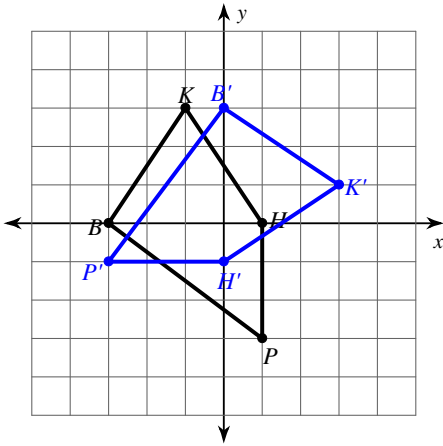


6) rotation 180° about the origin



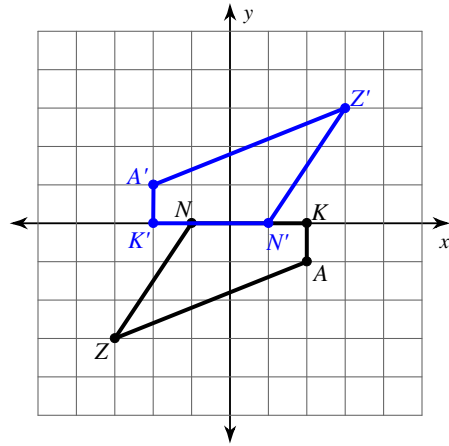
Write a rule to describe each transformation.

7)



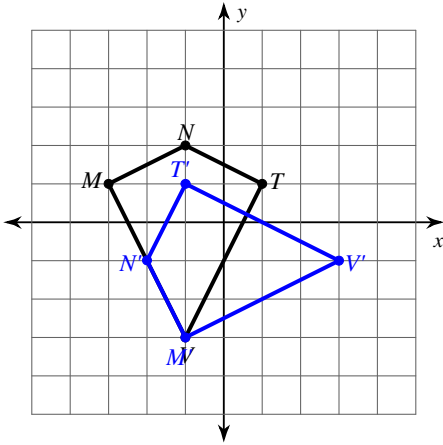
rotation 90° clockwise about the origin

8)



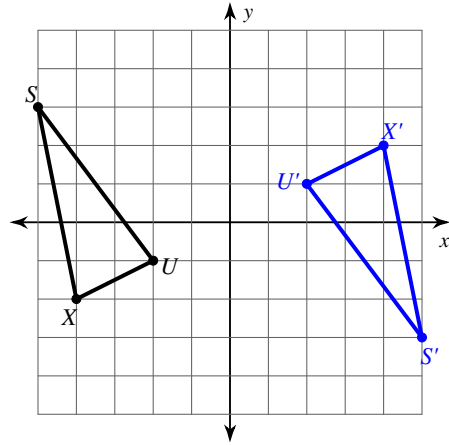
rotation 180° about the origin

9)



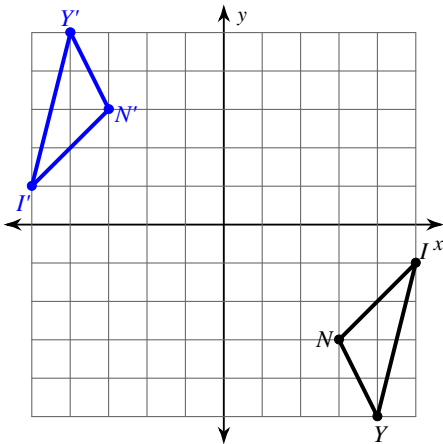
rotation 90° counterclockwise about the origin

10)



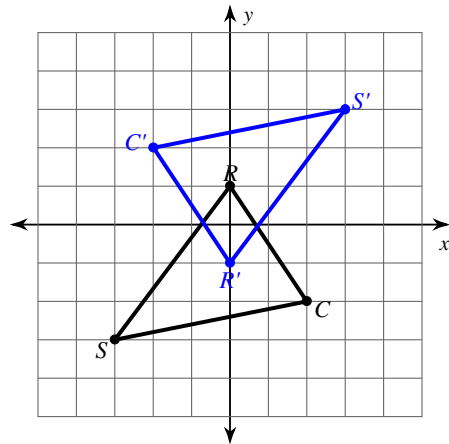
rotation 180° about the origin

11)



rotation 180° about the origin

12)



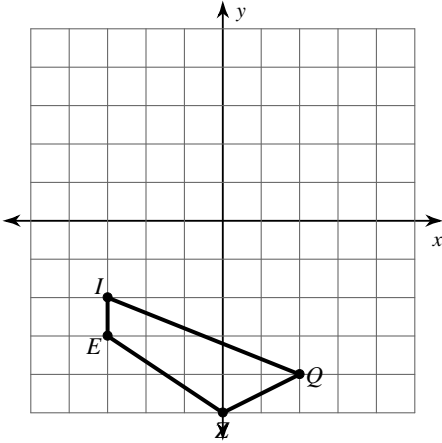
rotation 180° about the origin

Reflections

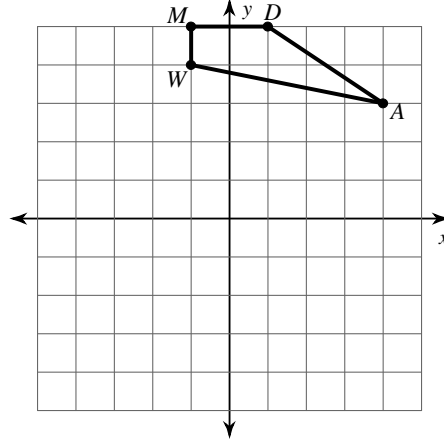
Date _____ Period _____

Graph the image of the figure using the transformation given.

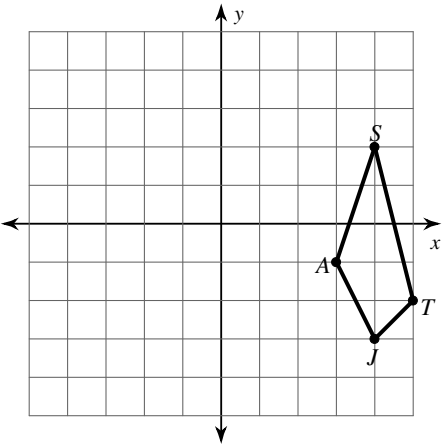
1) reflection across $y = -2$



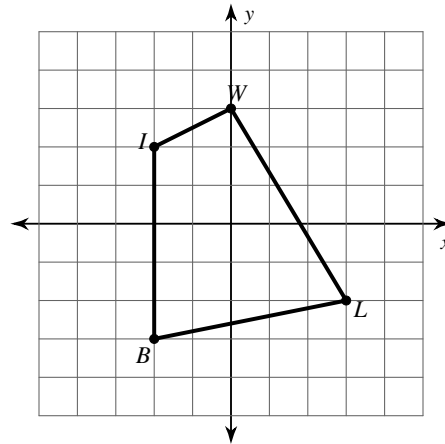
2) reflection across the x-axis



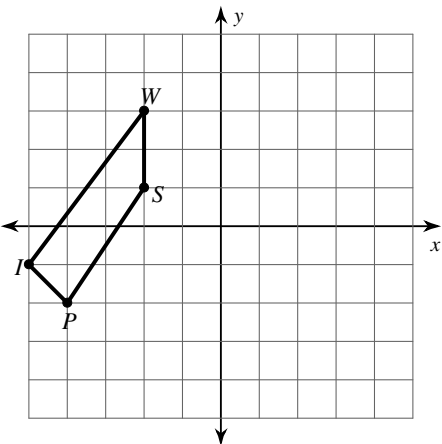
3) reflection across $y = -x$



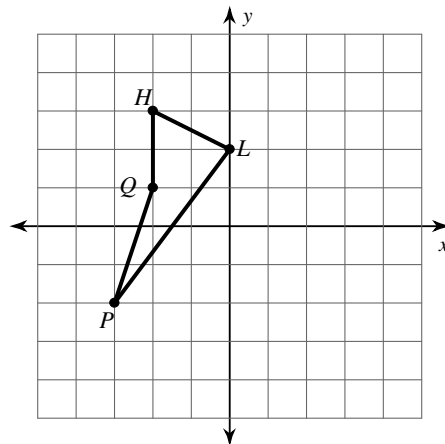
4) reflection across $y = -1$



5) reflection across $x = -3$

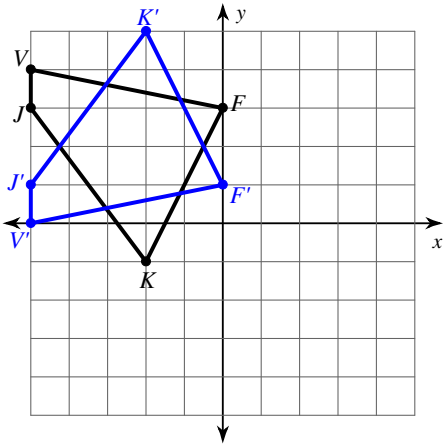


6) reflection across $y = x$

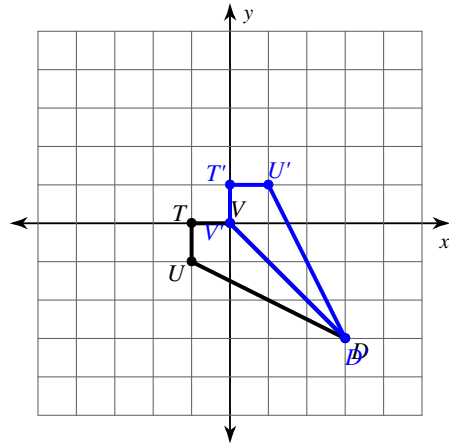


Write a rule to describe each transformation.

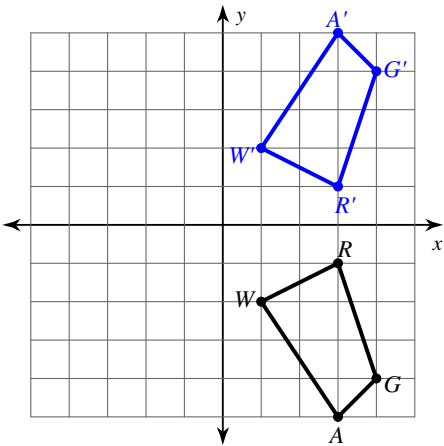
7)



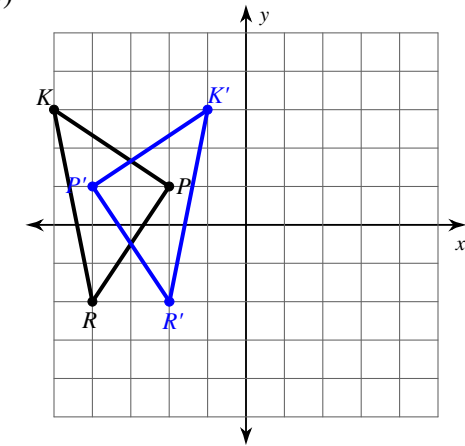
8)



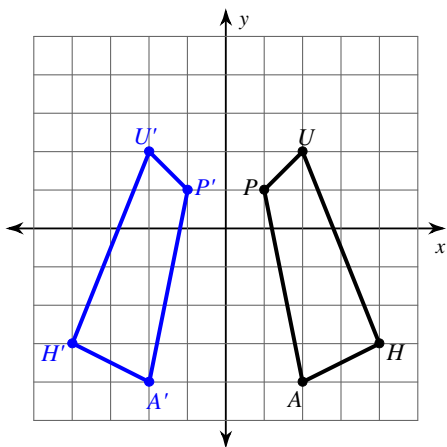
9)



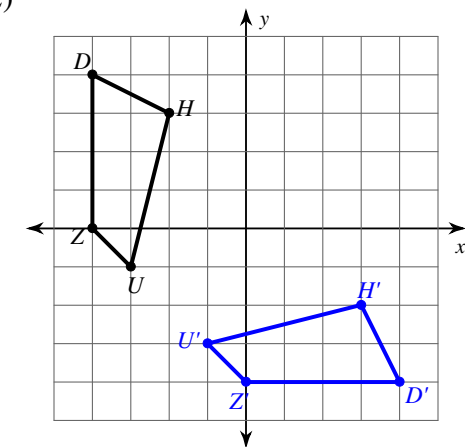
10)



11)



12)

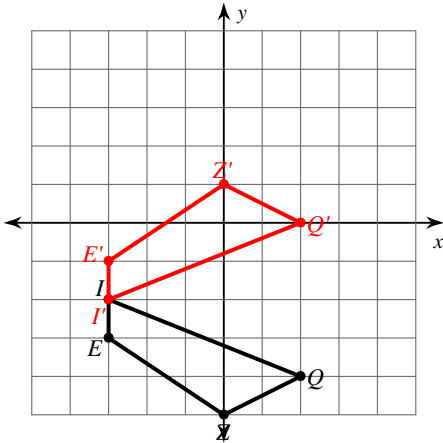


Reflections

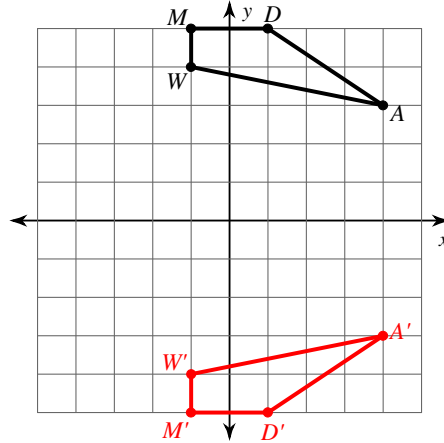
Date _____ Period _____

Graph the image of the figure using the transformation given.

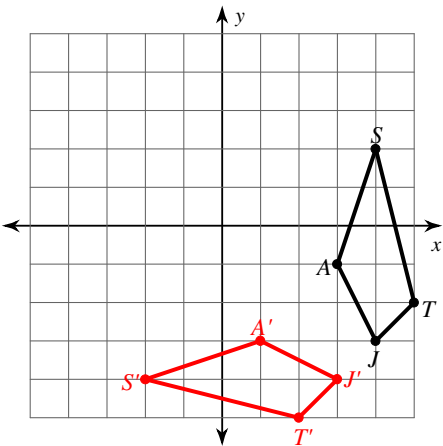
1) reflection across $y = -2$



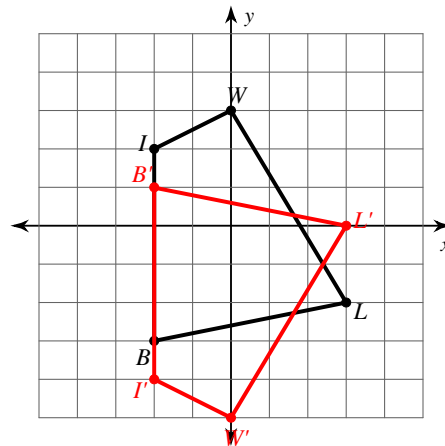
2) reflection across the x-axis



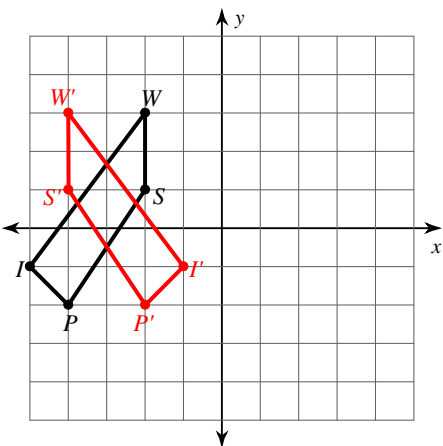
3) reflection across $y = -x$



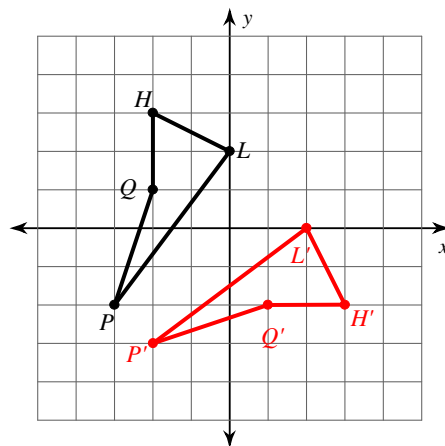
4) reflection across $y = -1$



5) reflection across $x = -3$

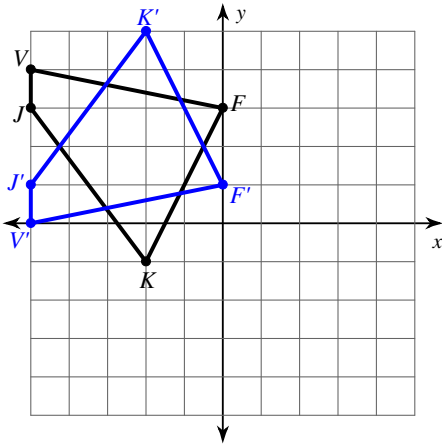


6) reflection across $y = x$



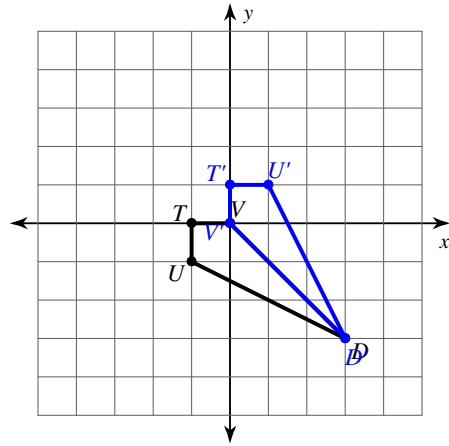
Write a rule to describe each transformation.

7)



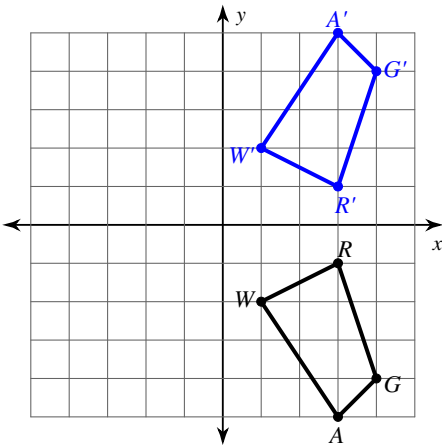
reflection across $y = 2$

8)



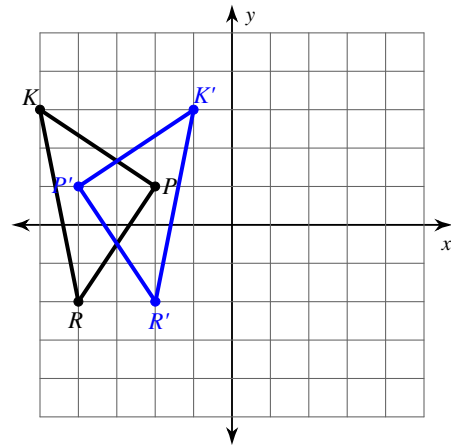
reflection across $y = -x$

9)



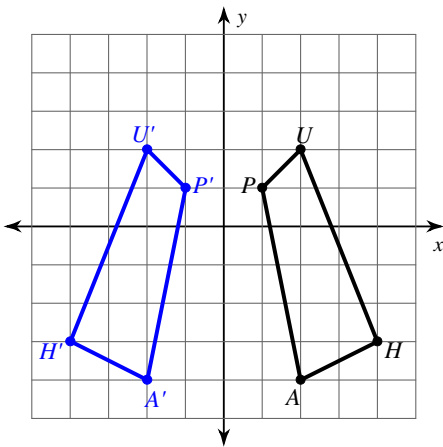
reflection across the x-axis

10)



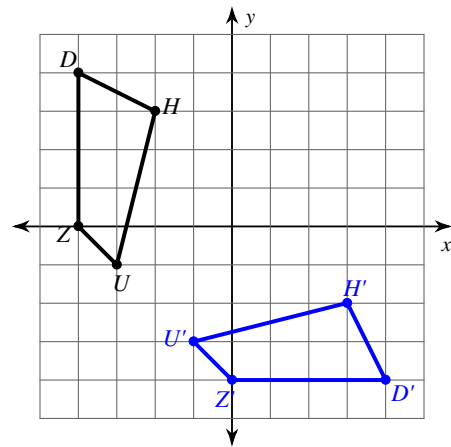
reflection across $x = -3$

11)



reflection across the y-axis

12)



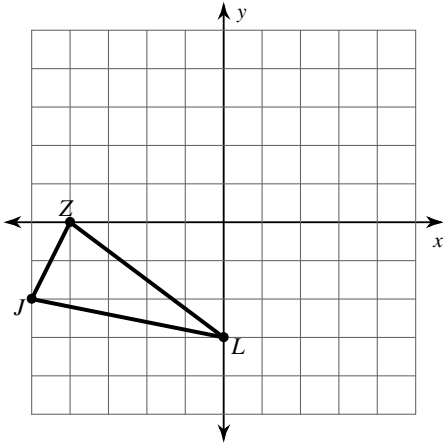
reflection across $y = x$

All Transformations

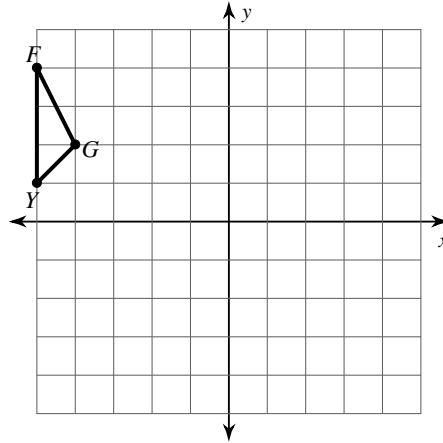
Date _____ Period _____

Graph the image of the figure using the transformation given.

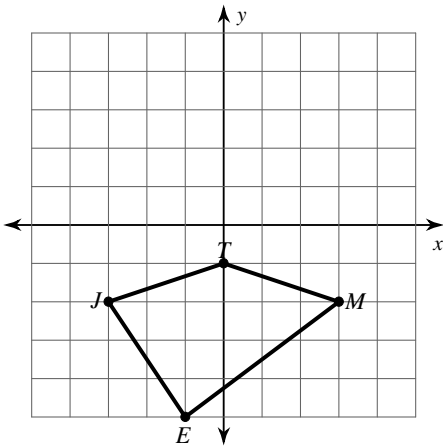
1) rotation 90° counterclockwise about the origin



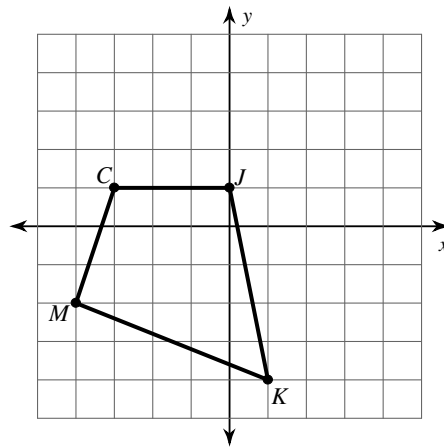
2) translation: 4 units right and 1 unit down



3) translation: 1 unit right and 1 unit up

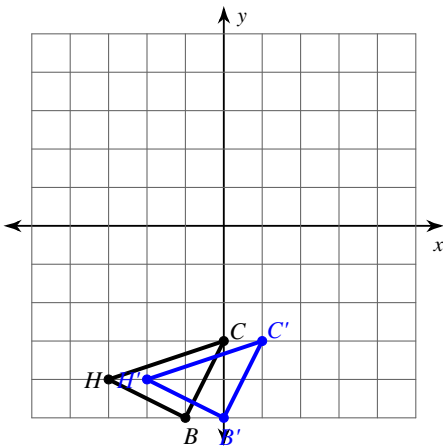


4) reflection across the x-axis

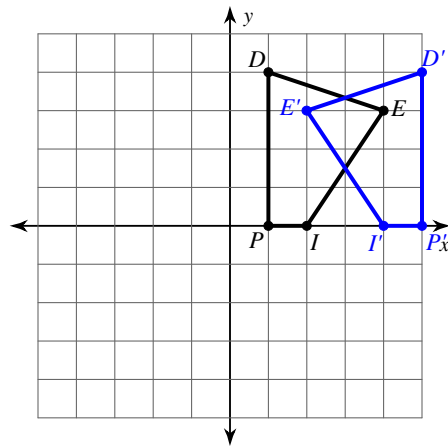


Write a rule to describe each transformation.

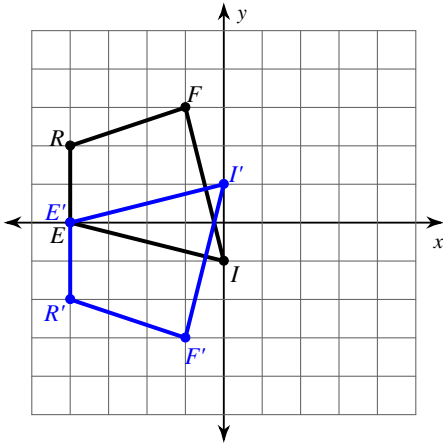
5)



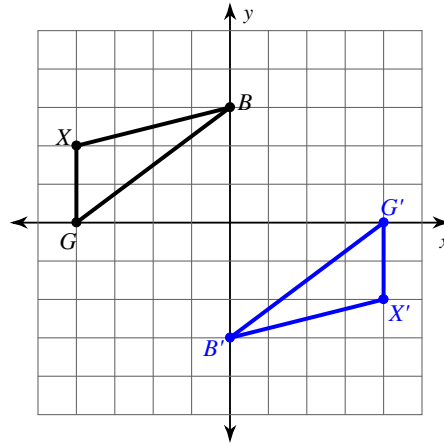
6)



7)

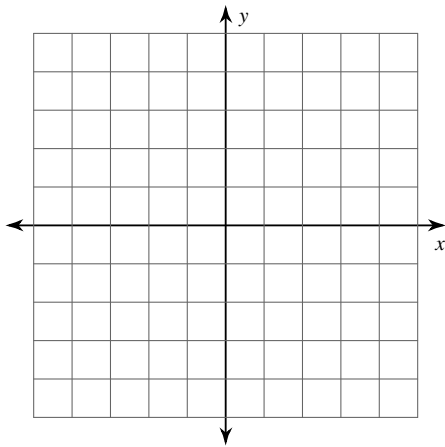


8)

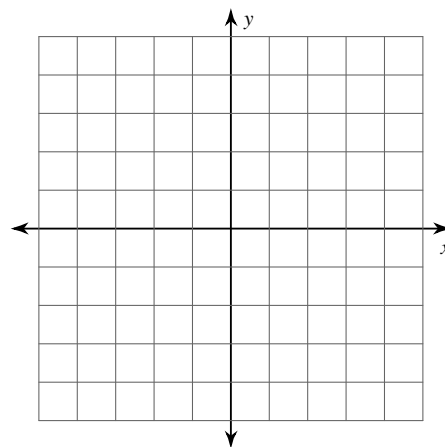


Graph the image of the figure using the transformation given.

9) rotation 90° clockwise about the origin
 $B(-2, 0)$, $C(-4, 3)$, $Z(-3, 4)$, $X(-1, 4)$



10) reflection across $y = x$
 $K(-5, -2)$, $A(-4, 1)$, $I(0, -1)$, $J(-2, -4)$



Find the coordinates of the vertices of each figure after the given transformation.

11) rotation 180° about the origin
 $E(2, -2)$, $J(1, 2)$, $R(3, 3)$, $S(5, 2)$

12) reflection across $y = 2$
 $J(1, 3)$, $U(0, 5)$, $R(1, 5)$, $C(3, 2)$

13) translation: 7 units right and 1 unit down
 $J(-3, 1)$, $F(-2, 3)$, $N(-2, 0)$

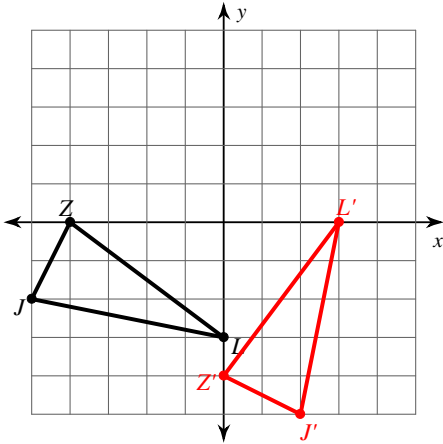
14) translation: 6 units right and 3 units down
 $S(-3, 3)$, $C(-1, 4)$, $W(-2, -1)$

All Transformations

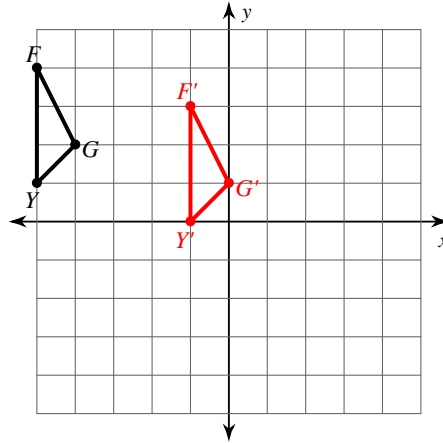
Date _____ Period _____

Graph the image of the figure using the transformation given.

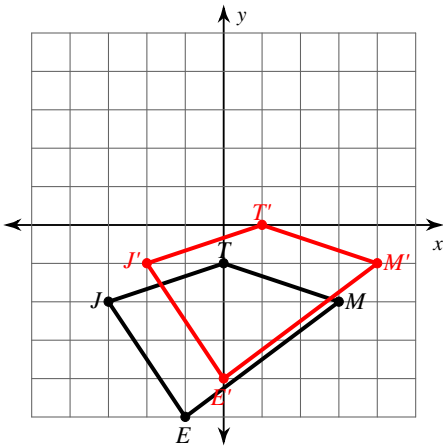
1) rotation 90° counterclockwise about the origin



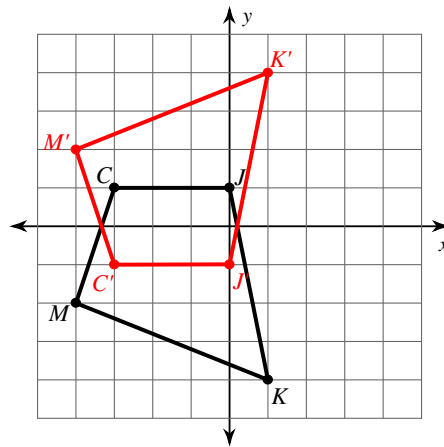
2) translation: 4 units right and 1 unit down



3) translation: 1 unit right and 1 unit up

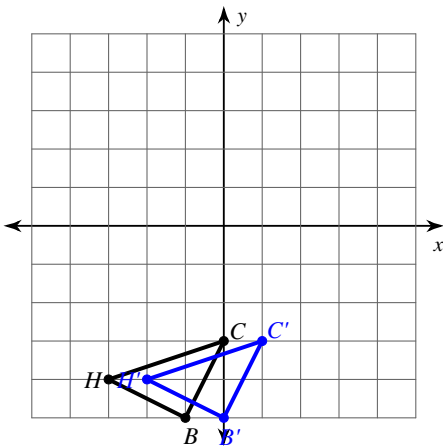


4) reflection across the x-axis



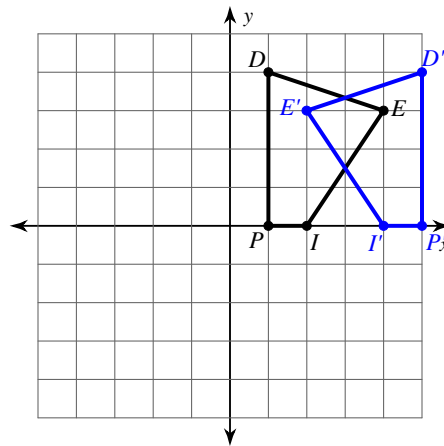
Write a rule to describe each transformation.

5)



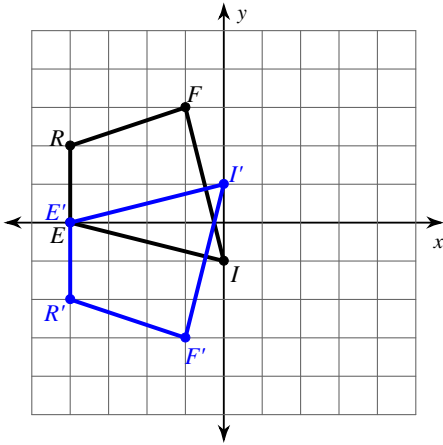
translation: 1 unit right

6)



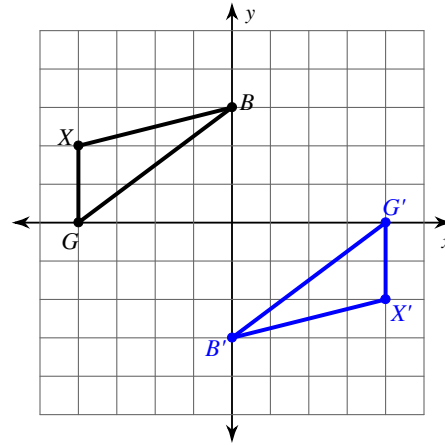
reflection across $x = 3$

7)



reflection across the x-axis

8)

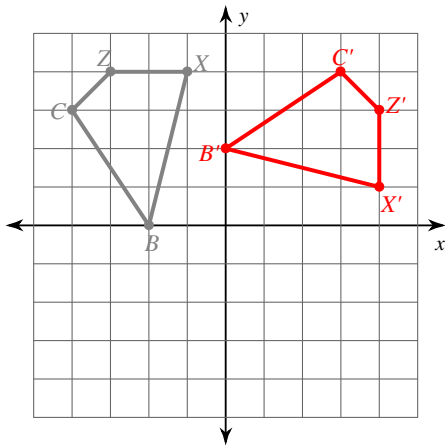


rotation 180° about the origin

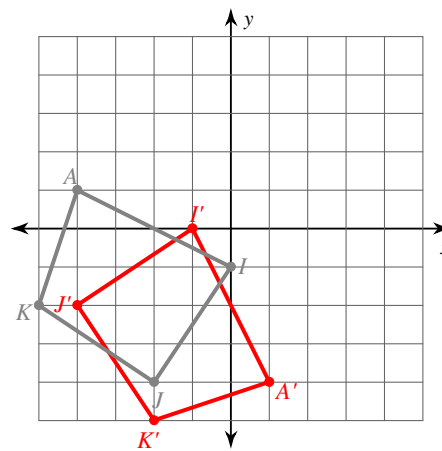
Graph the image of the figure using the transformation given.

9) rotation 90° clockwise about the origin

$B(-2, 0)$, $C(-4, 3)$, $Z(-3, 4)$, $X(-1, 4)$

10) reflection across $y = x$

$K(-5, -2)$, $A(-4, 1)$, $I(0, -1)$, $J(-2, -4)$



Find the coordinates of the vertices of each figure after the given transformation.

11) rotation 180° about the origin

$E(2, -2)$, $J(1, 2)$, $R(3, 3)$, $S(5, 2)$

$E'(-2, 2)$, $J'(-1, -2)$, $R'(-3, -3)$, $S'(-5, -2)$

12) reflection across $y = 2$

$J(1, 3)$, $U(0, 5)$, $R(1, 5)$, $C(3, 2)$

$U'(0, -1)$, $R'(1, -1)$, $C'(3, 2)$, $J'(1, 1)$

13) translation: 7 units right and 1 unit down

$J(-3, 1)$, $F(-2, 3)$, $N(-2, 0)$

$J'(4, 0)$, $F'(5, 2)$, $N'(5, -1)$

14) translation: 6 units right and 3 units down

$S(-3, 3)$, $C(-1, 4)$, $W(-2, -1)$

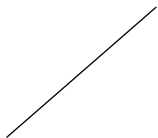
$S'(3, 0)$, $C'(5, 1)$, $W'(4, -4)$

Line Segment Constructions

Date _____ Period _____

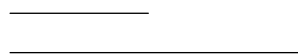
Construct a line segment congruent to each given line segment.

1)



Construct a line segment whose length is equal to the sum of the lengths of the given line segments.

2)



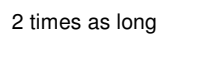
Construct a line segment whose length is equal to the difference of the lengths of the given line segments.

3)



Construct a line segment the given number of times longer than the given segment.

4)



Construct a line segment half as long as the given line segment.

5)



Divide each line segment into the the number of equal parts specified.

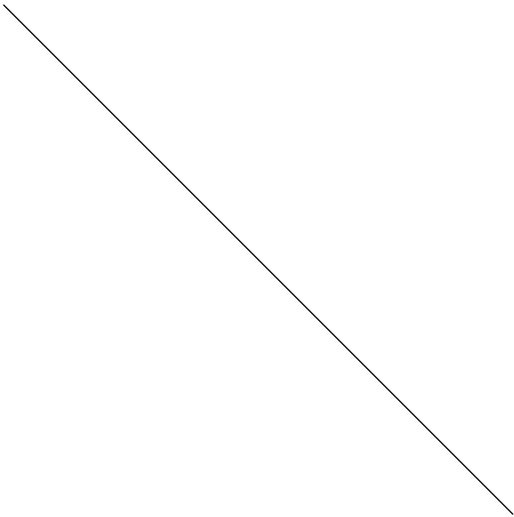
6)

3 equal parts



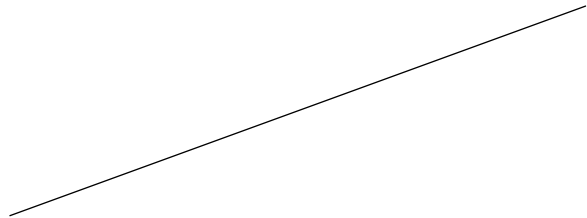
Construct the perpendicular bisector of each.

7)



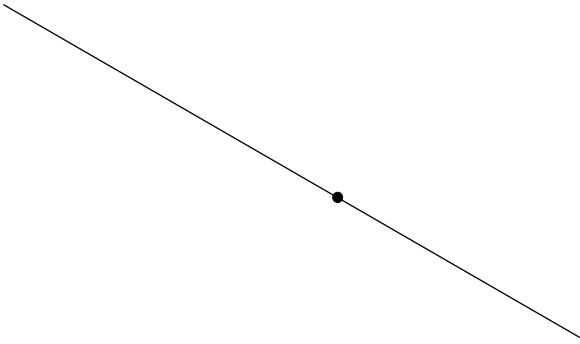
Locate the midpoint of each.

8)

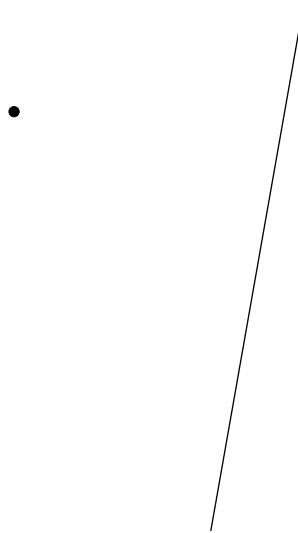


Construct a line segment perpendicular to the segment given through the point given.

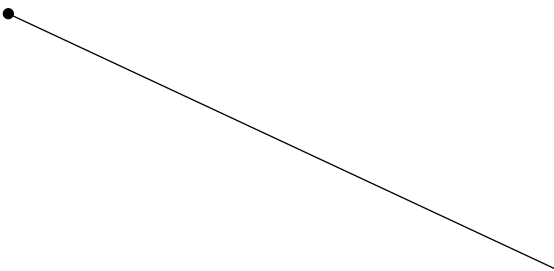
9)



10)

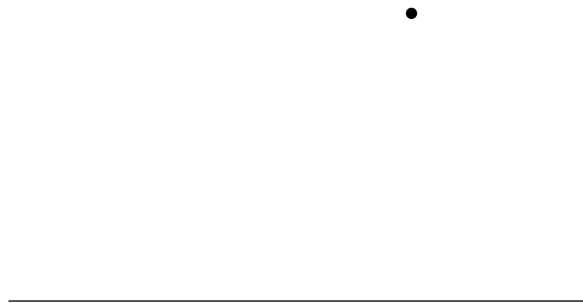


11)



Construct a line segment through the given point parallel to the given line segment.

12)

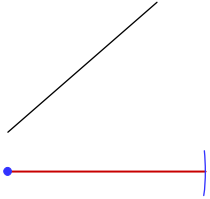


Line Segment Constructions

Date _____ Period _____

Construct a line segment congruent to each given line segment.

1)



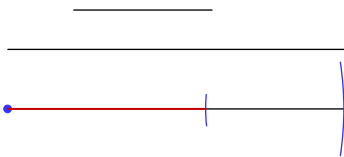
Construct a line segment whose length is equal to the sum of the lengths of the given line segments.

2)



Construct a line segment whose length is equal to the difference of the lengths of the given line segments.

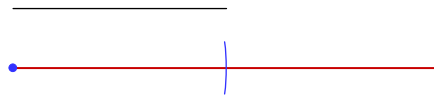
3)



Construct a line segment the given number of times longer than the given segment.

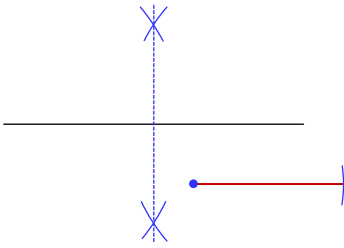
4)

2 times as long



Construct a line segment half as long as the given line segment.

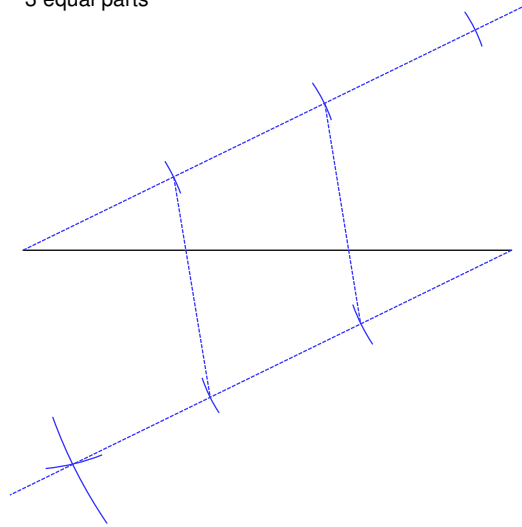
5)



Divide each line segment into the the number of equal parts specified.

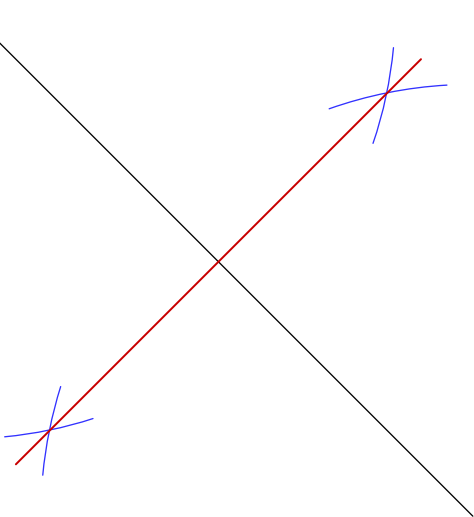
6)

3 equal parts



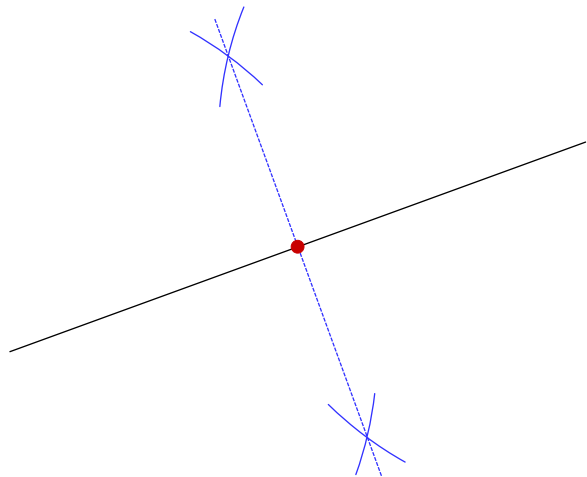
Construct the perpendicular bisector of each.

7)



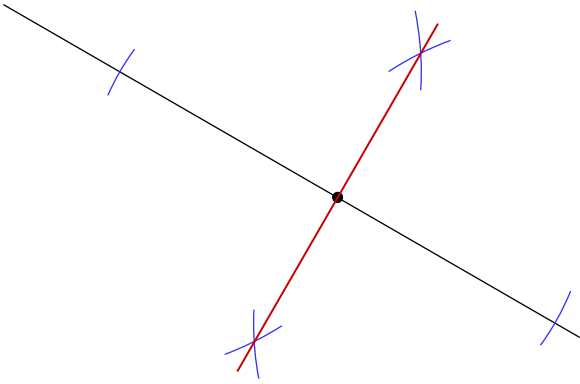
Locate the midpoint of each.

8)

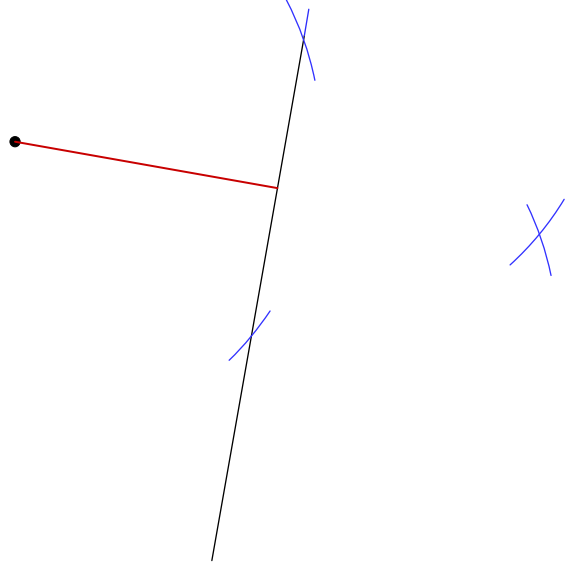


Construct a line segment perpendicular to the segment given through the point given.

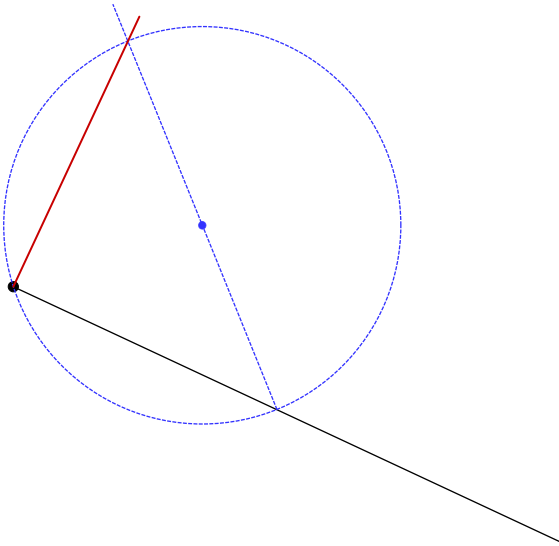
9)



10)

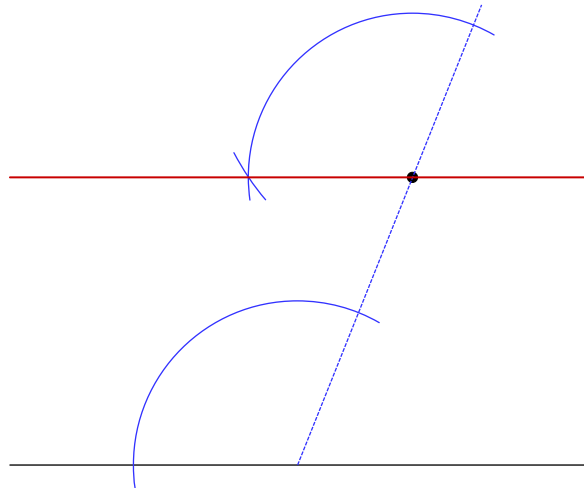


11)



Construct a line segment through the given point parallel to the given line segment.

12)



Perpendicular Bisector Constructions

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Construct the perpendicular bisector of each.

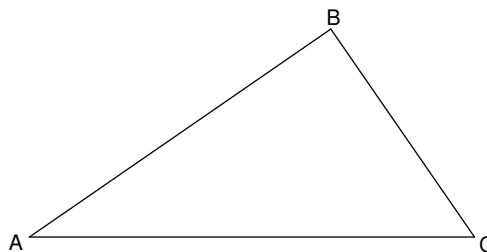
1)



Date _____ Period _____

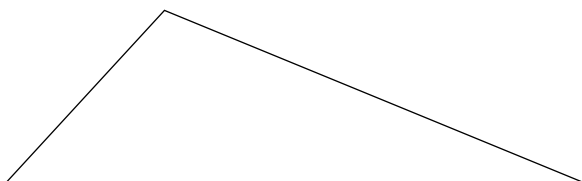
Construct the perpendicular bisector of side AB of each triangle.

2)



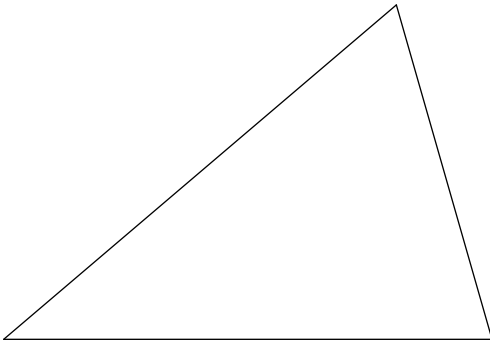
Locate the circumcenter of each triangle.

3)

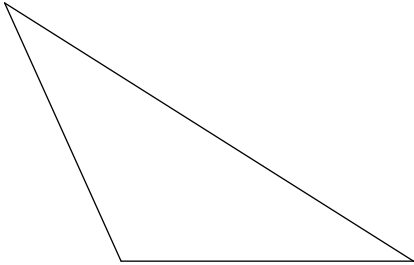


For each triangle, construct all three perpendicular bisectors to show they are concurrent. Circumscribe a circle about each triangle.

4)



5)

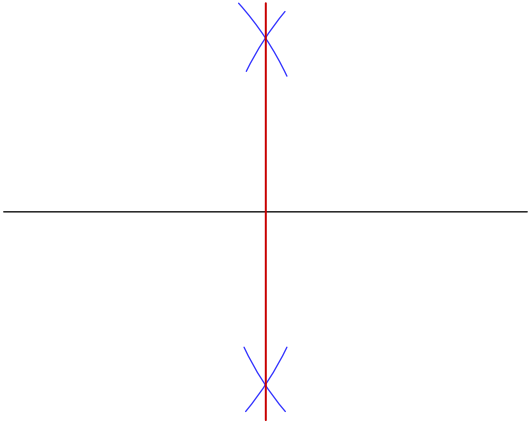


Perpendicular Bisector Constructions

Date _____ Period _____

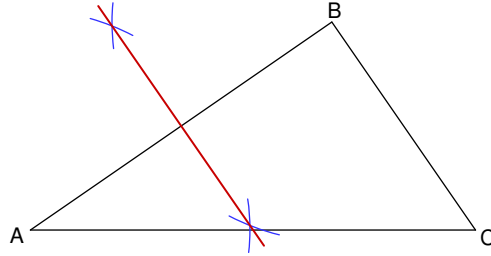
Construct the perpendicular bisector of each.

1)



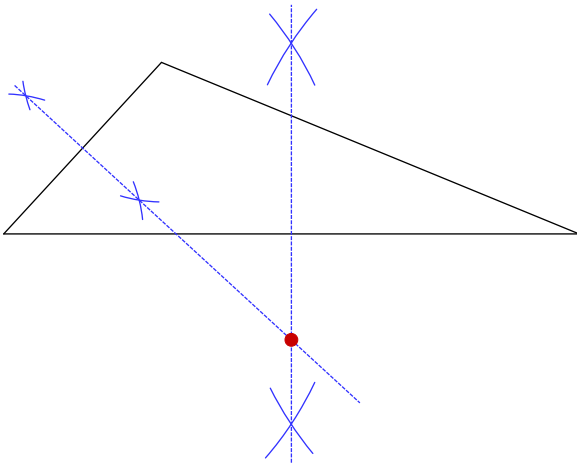
Construct the perpendicular bisector of side AB of each triangle.

2)



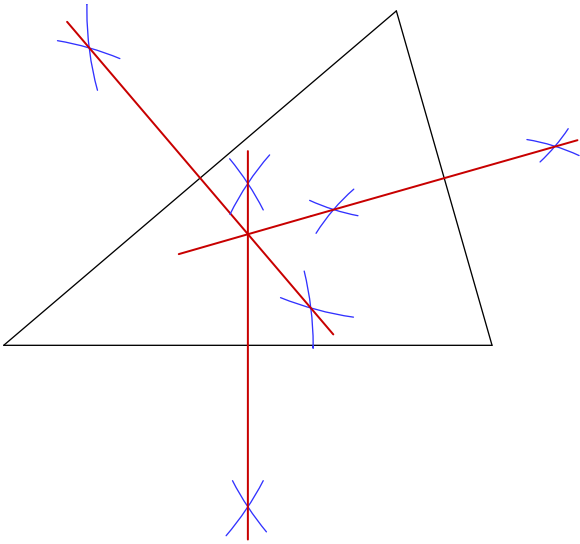
Locate the circumcenter of each triangle.

3)

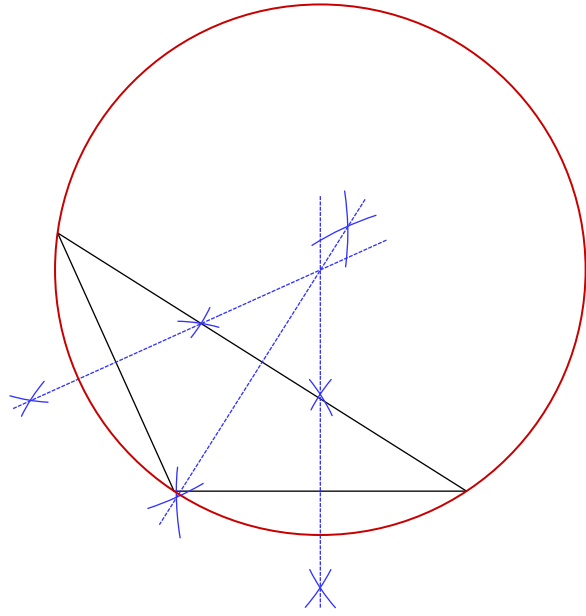


For each triangle, construct all three perpendicular bisectors to show they are concurrent. Circumscribe a circle about each triangle.

4)



5)

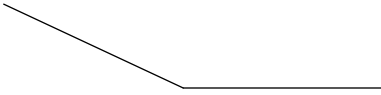


Angle Constructions

Date _____ Period _____

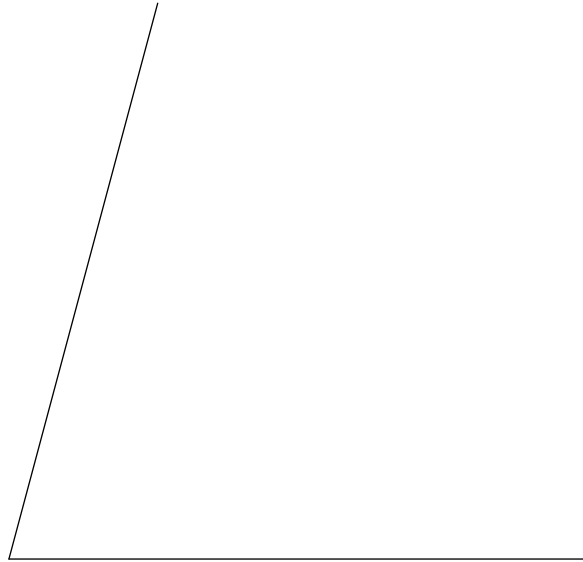
Construct a copy of each angle given.

1)



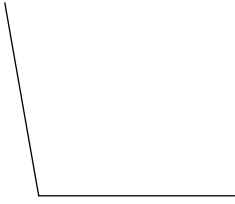
Construct the bisector of each angle.

2)



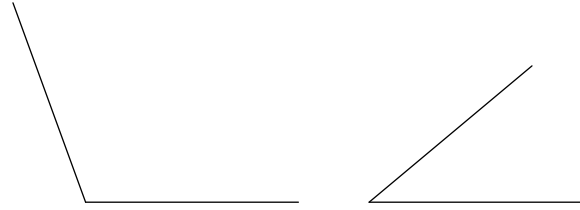
Construct an angle whose measure is twice that of the angle given.

3)



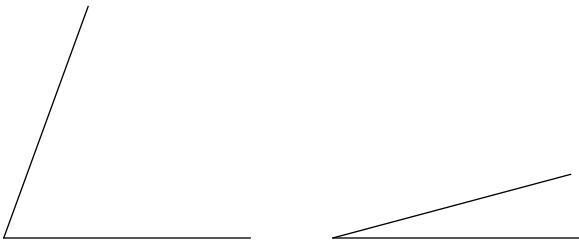
Construct an angle whose measure is equal to the sum of the measures of the angles given.

4)



Construct an angle whose measure is equal to the difference of the measures of the angles given.

5)



Construct a 30° angle.

6)

Construct a 45° angle.

7)

Construct a 60° angle.

8)

Construct a 90° angle.

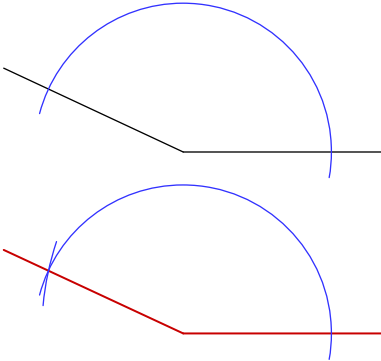
9)

Angle Constructions

Date _____ Period _____

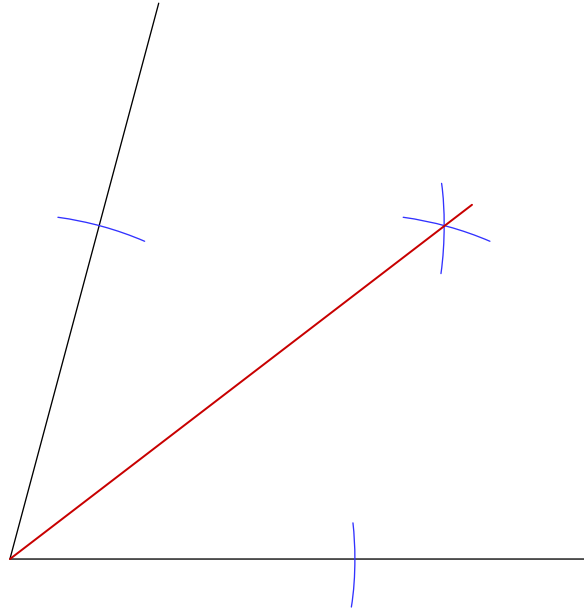
Construct a copy of each angle given.

1)



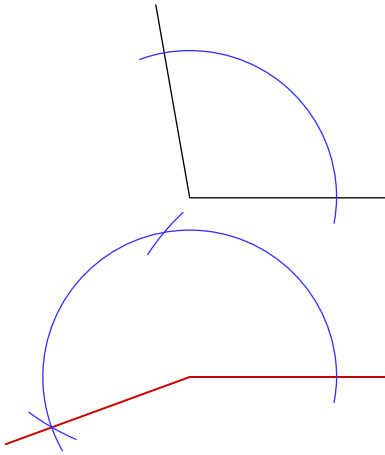
Construct the bisector of each angle.

2)



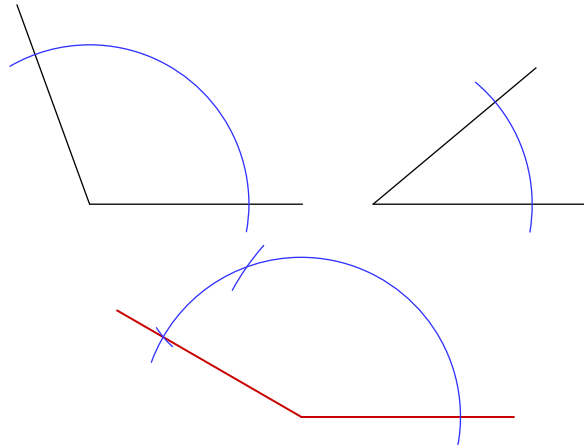
Construct an angle whose measure is twice that of the angle given.

3)



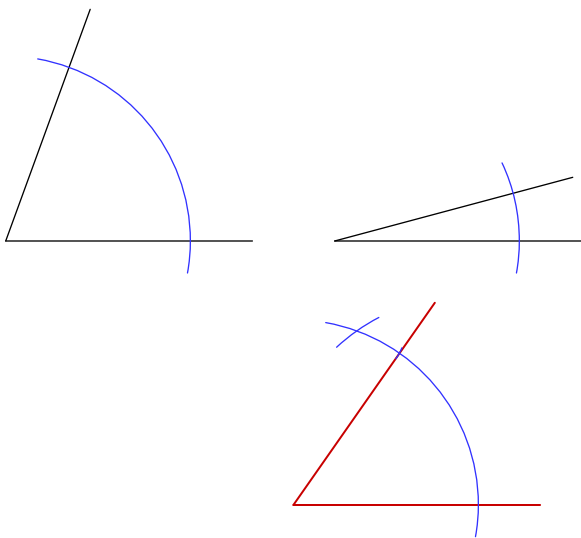
Construct an angle whose measure is equal to the sum of the measures of the angles given.

4)



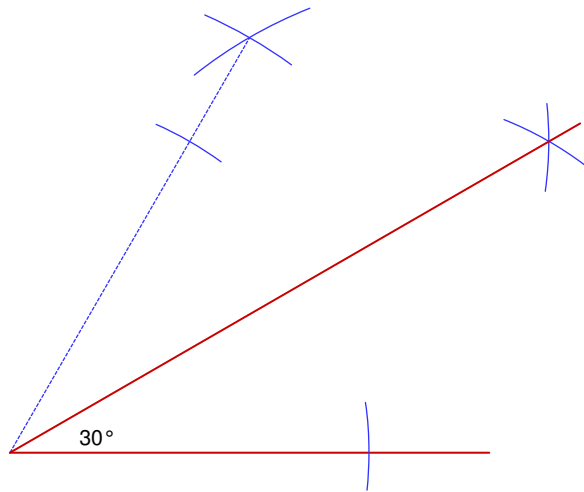
Construct an angle whose measure is equal to the difference of the measures of the angles given.

5)



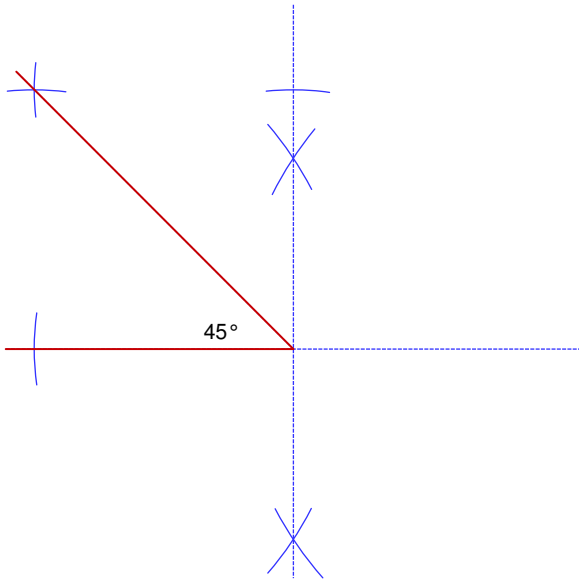
Construct a 30° angle.

6)



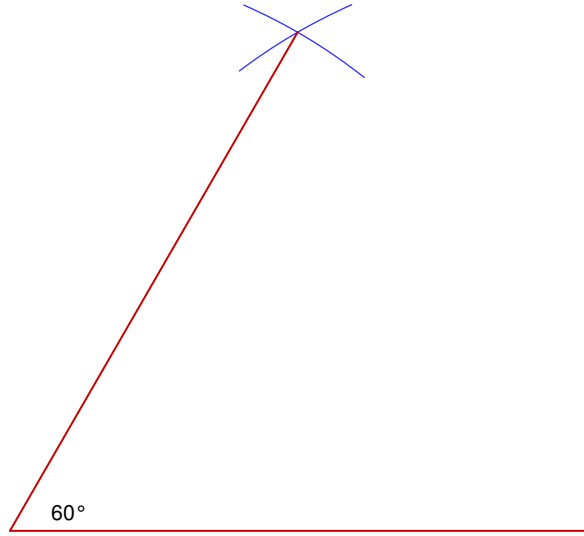
Construct a 45° angle.

7)



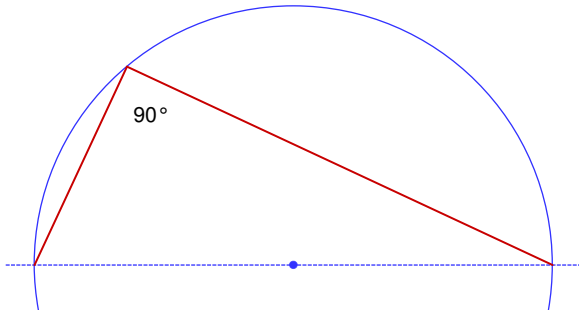
Construct a 60° angle.

8)



Construct a 90° angle.

9)

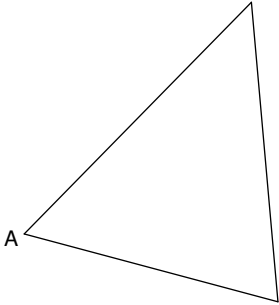


Altitudes of Triangles Constructions

Date _____ Period _____

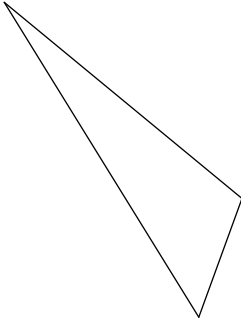
For each triangle, construct the altitude from vertex A.

1)



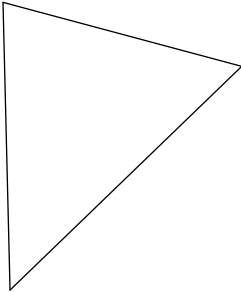
Locate the orthocenter of each triangle.

2)



For each triangle, construct all three altitudes to show they are concurrent.

3)

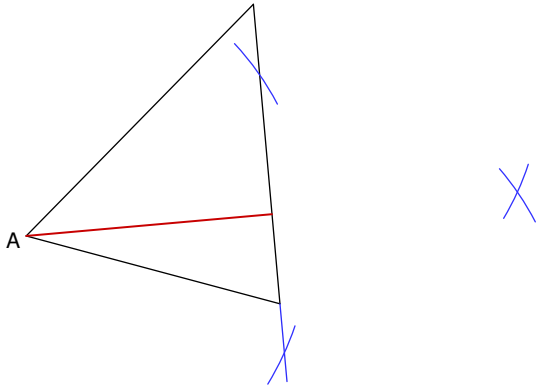


Altitudes of Triangles Constructions

Date _____ Period _____

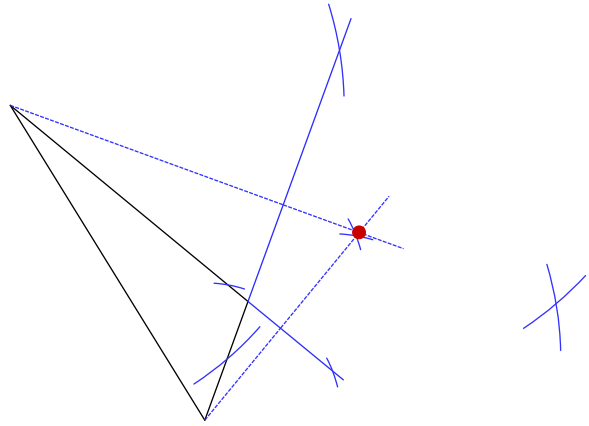
For each triangle, construct the altitude from vertex A.

1)



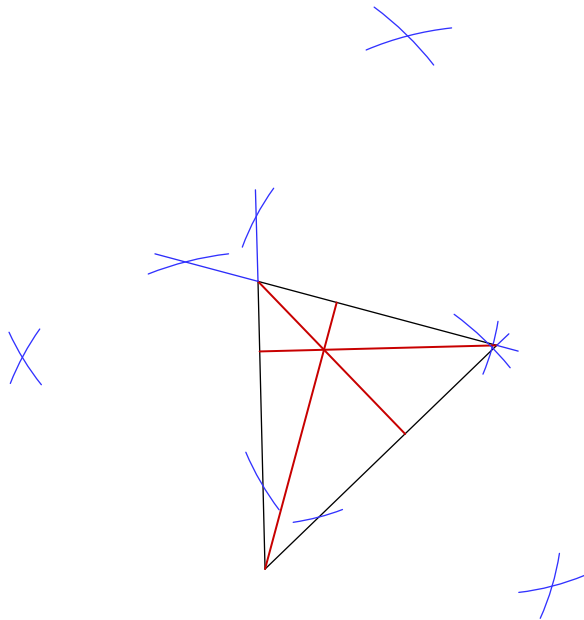
Locate the orthocenter of each triangle.

2)



For each triangle, construct all three altitudes to show they are concurrent.

3)



Medians of Triangles Constructions

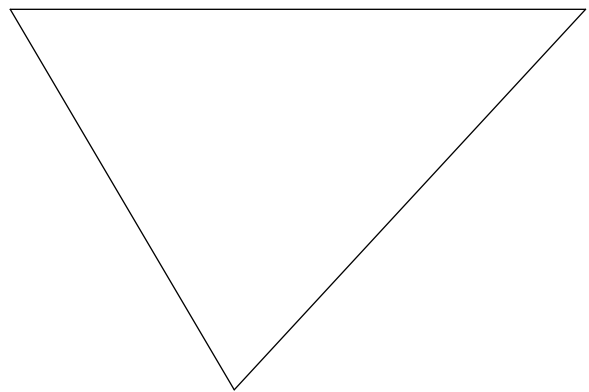
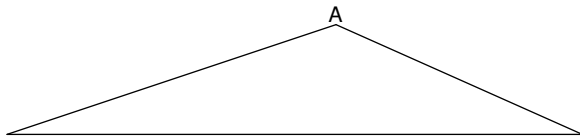
Date _____ Period _____

For each triangle, construct the median from vertex A.

Locate the centroid of each triangle.

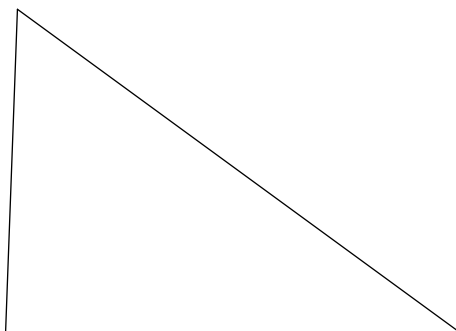
1)

2)



For each triangle, construct all three medians to show they are concurrent.

3)

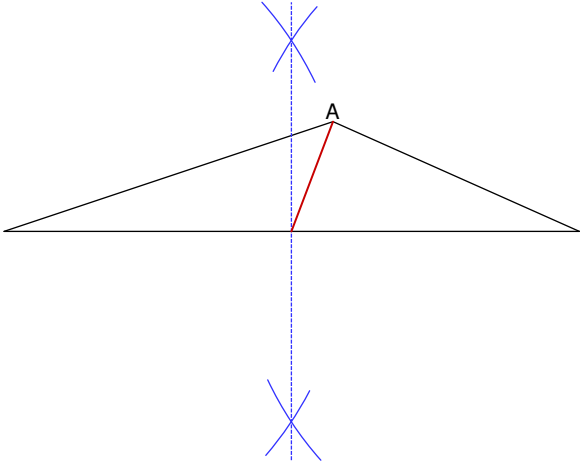


Medians of Triangles Constructions

Date _____ Period _____

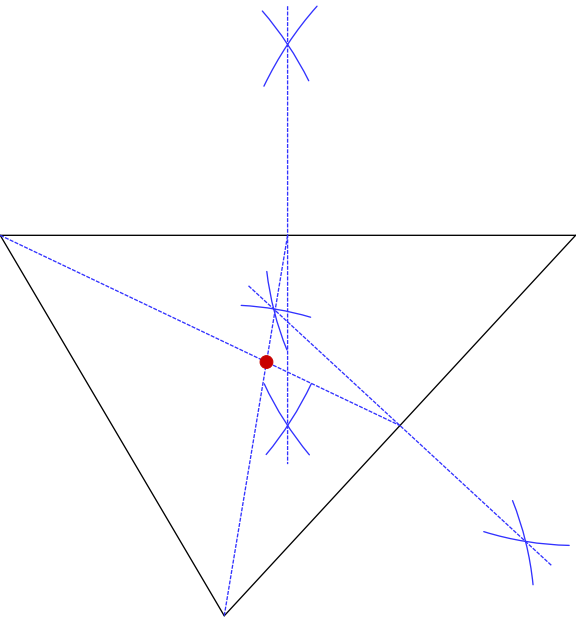
For each triangle, construct the median from vertex A.

1)



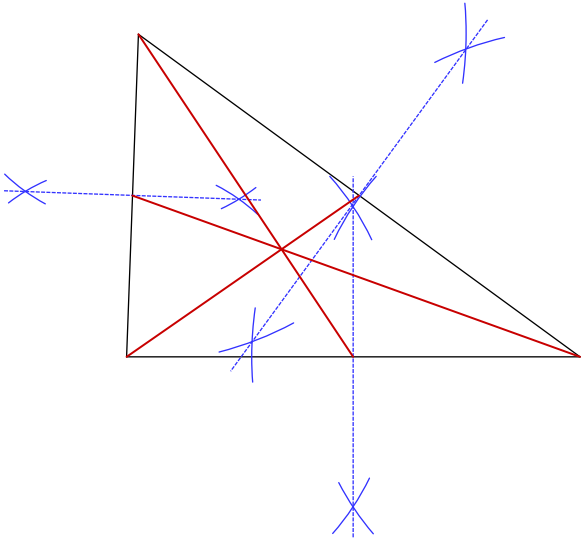
Locate the centroid of each triangle.

2)



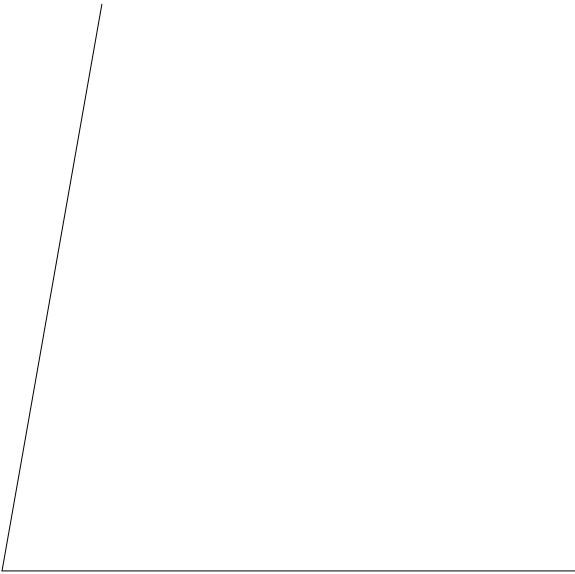
For each triangle, construct all three medians to show they are concurrent.

3)



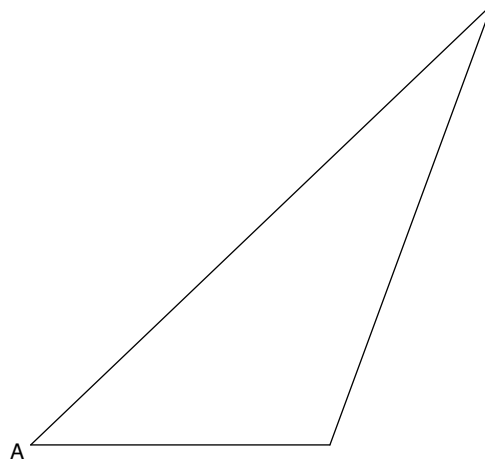
Construct the bisector of each angle.

1)



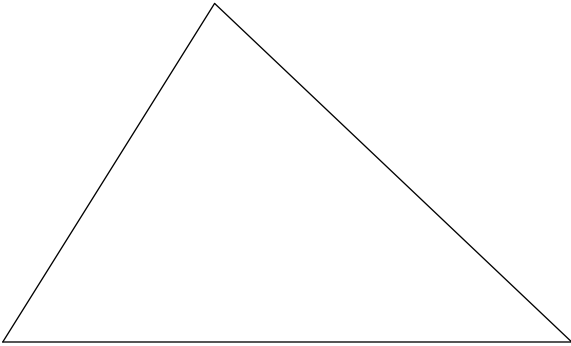
For each triangle, construct the angle bisector of angle A.

2)



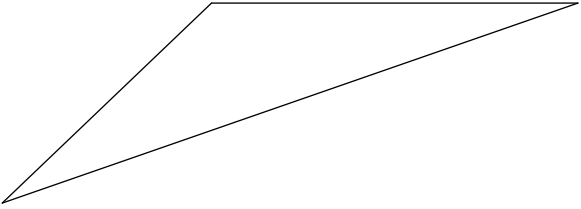
Locate the incenter of each triangle.

3)



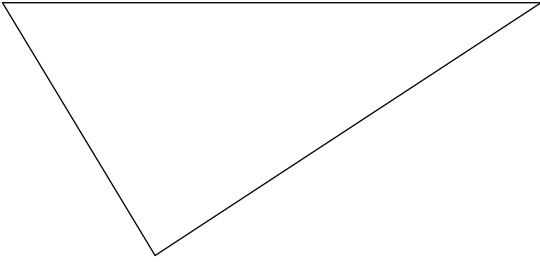
For each triangle, construct all three angle bisectors to show they are concurrent.

4)



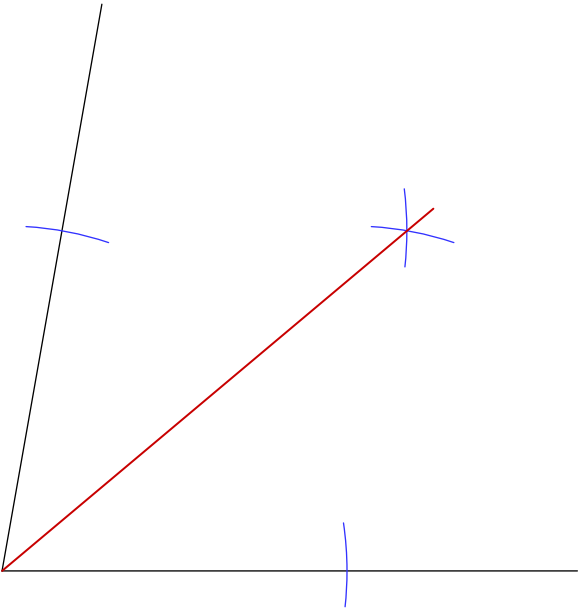
Inscribe a circle in each triangle.

5)



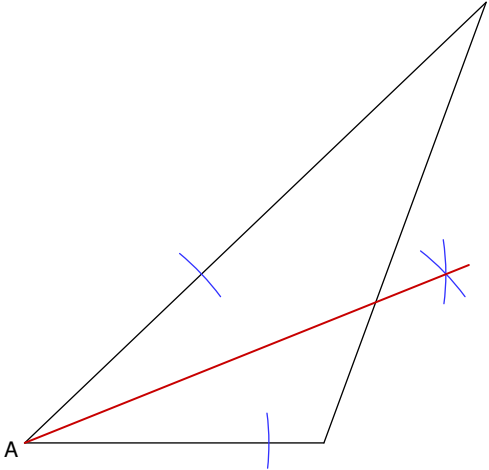
Construct the bisector of each angle.

1)



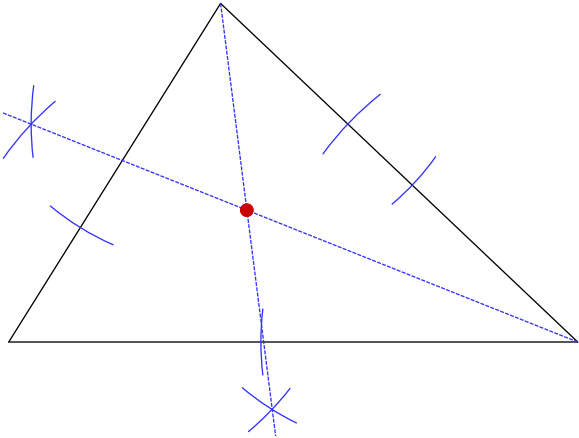
For each triangle, construct the angle bisector of angle A.

2)



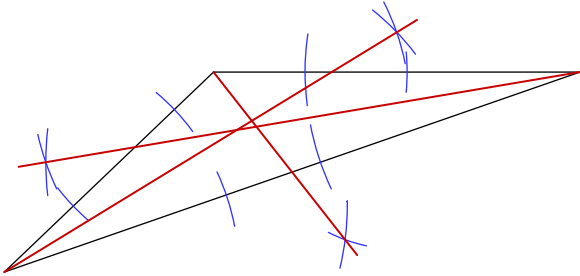
Locate the incenter of each triangle.

3)



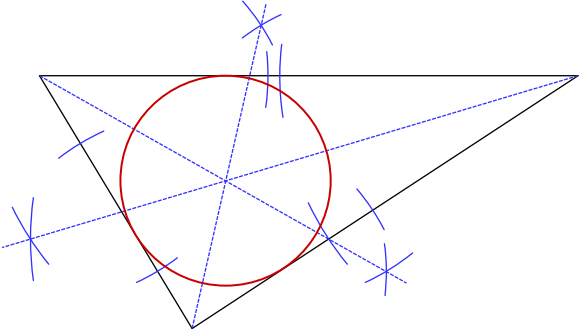
For each triangle, construct all three angle bisectors to show they are concurrent.

4)



Inscribe a circle in each triangle.

5)

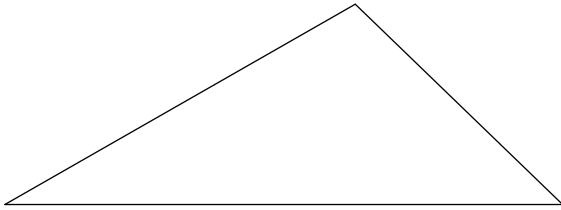


Triangle Constructions

Date _____ Period _____

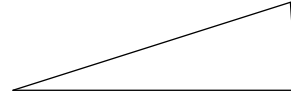
Construct a copy of each triangle given.

1)



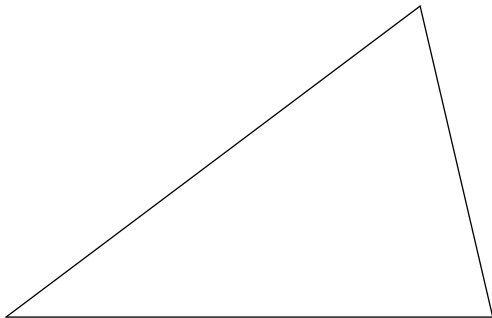
Construct a triangle whose sides are twice as long as the sides of the given triangle.

2)



Construct a triangle whose sides are half as long as the sides of the given triangle. **Construct an equilateral triangle.**

3)



4)

Construct an isosceles triangle given the length of the base and the length of the sides.

5)

Base: _____
Side: _____

Construct an isosceles triangle given the length of the base and the length of the altitude.

6)

Base: _____
Altitude: _____

Construct a right triangle given the hypotenuse and a leg.

7)

Hypotenuse: _____
Leg: _____

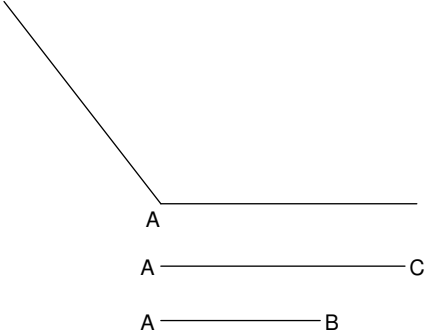
Construct a triangle given the three side lengths.

8)

Side 1: _____
Side 2: _____
Side 3: _____

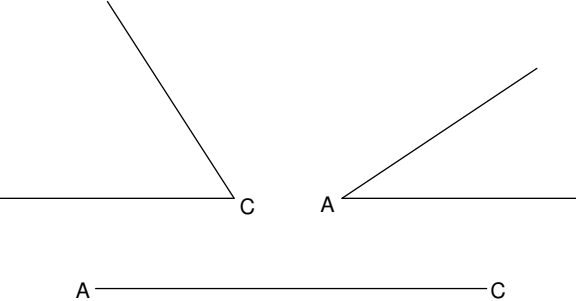
Construct triangle ABC given two sides and the included angle.

9)



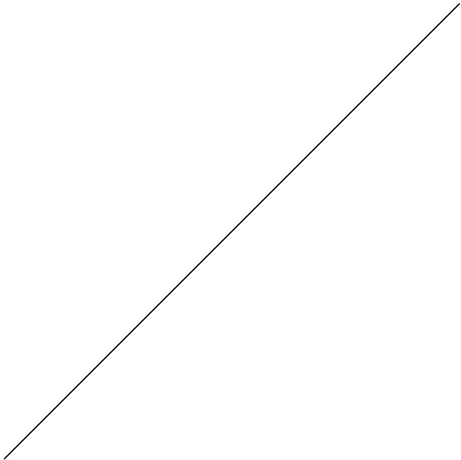
Construct triangle ABC given two angles and the included side.

10)



Construct a 30-60-90 triangle using the segment given as the hypotenuse.

11)

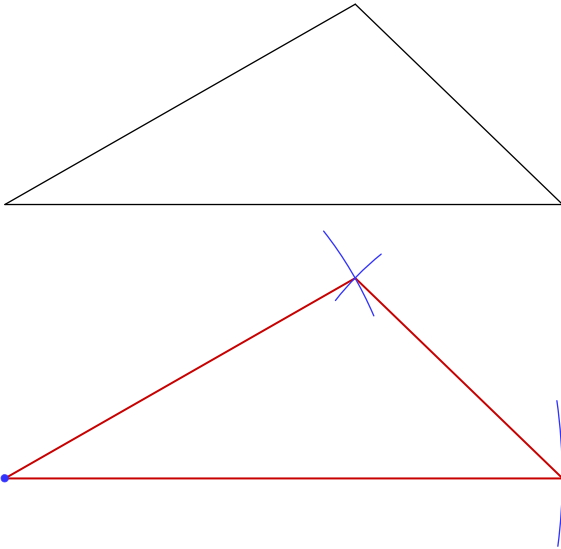


Triangle Constructions

Date _____ Period _____

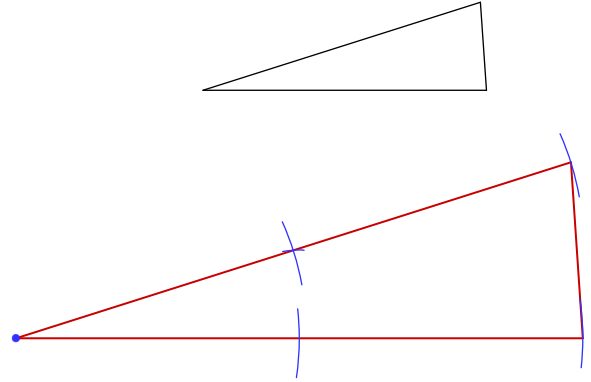
Construct a copy of each triangle given.

1)



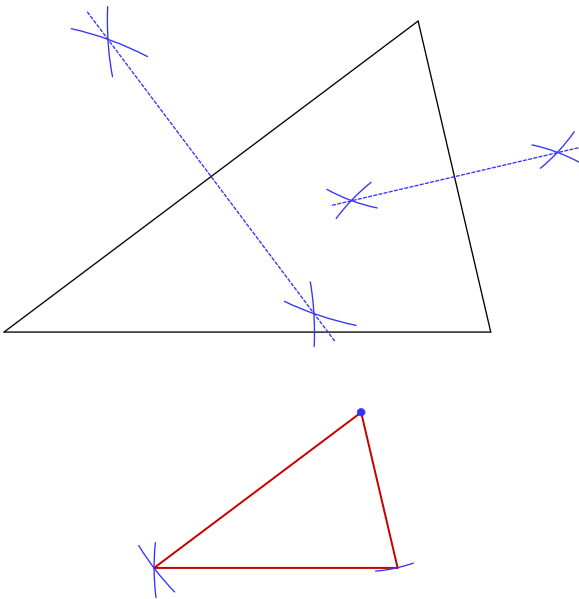
Construct a triangle whose sides are twice as long as the sides of the given triangle.

2)



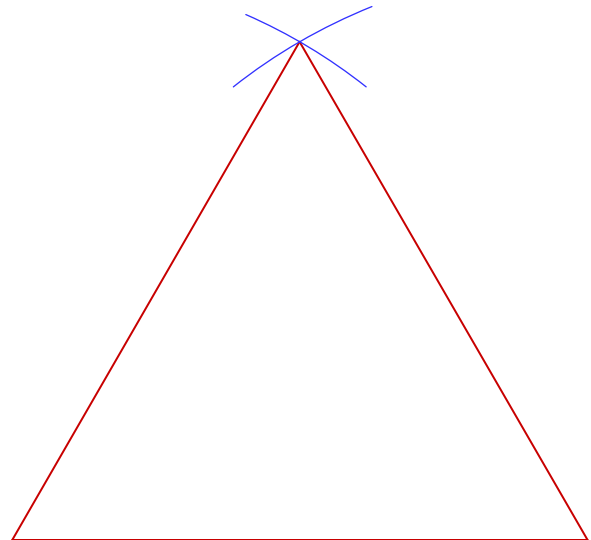
Construct a triangle whose sides are half as long as the sides of the given triangle.

3)



Construct an equilateral triangle.

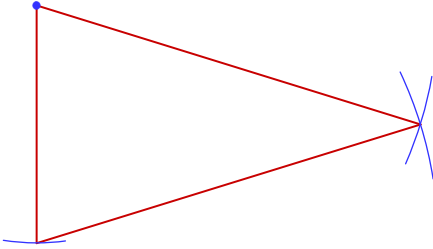
4)



Construct an isosceles triangle given the length of the base and the length of the sides.

5)

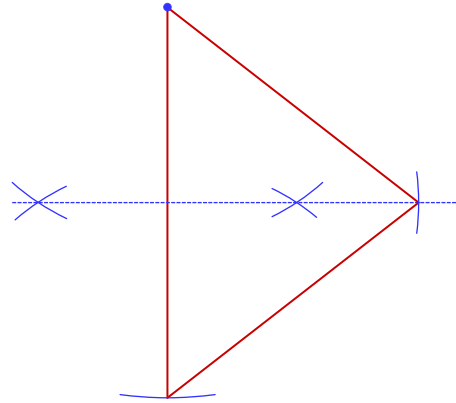
Base: _____
Side: _____



Construct an isosceles triangle given the length of the base and the length of the altitude.

6)

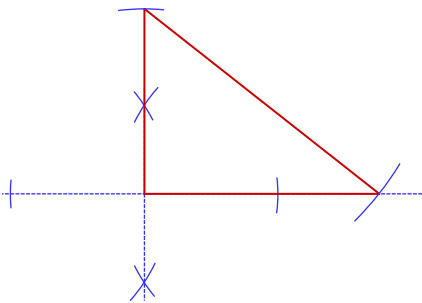
Base: _____
Altitude: _____



Construct a right triangle given the hypotenuse and a leg.

7)

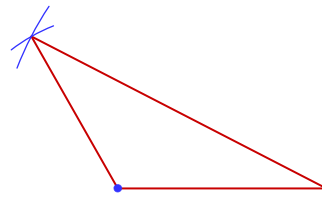
Hypotenuse: _____
Leg: _____



Construct a triangle given the three side lengths.

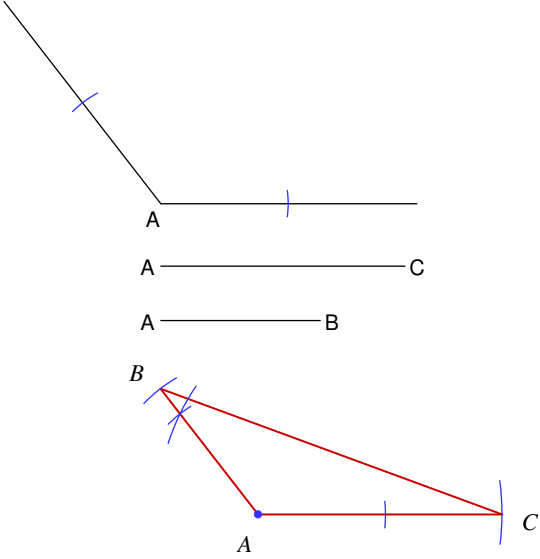
8)

Side 1: _____
Side 2: _____
Side 3: _____



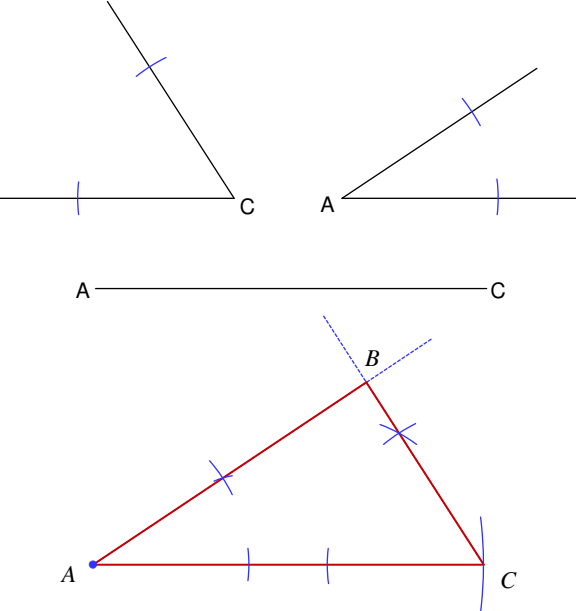
Construct triangle ABC given two sides and the included angle.

9)



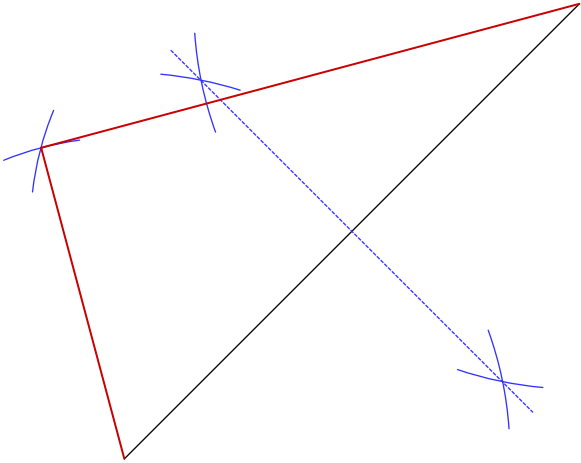
Construct triangle ABC given two angles and the included side.

10)



Construct a 30-60-90 triangle using the segment given as the hypotenuse.

11)

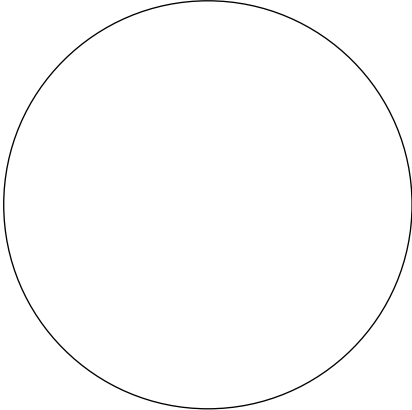


Circle Constructions

Date _____ Period _____

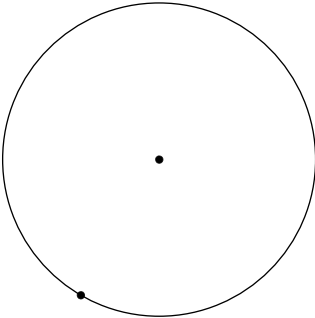
Locate the center of each circle.

1)

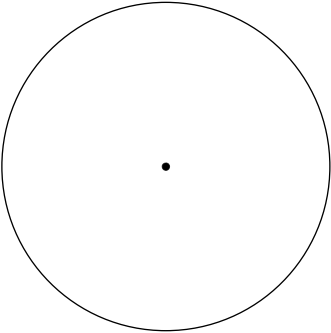


Construct a line segment tangent to the circle through the point given.

2)

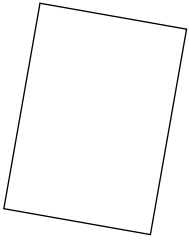


3)



Circumscribe a circle about each rectangle.

4)



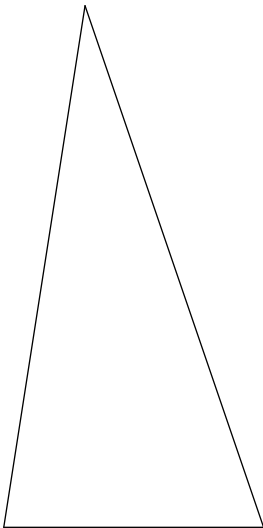
Construct a circle that passes through the points given.

5)



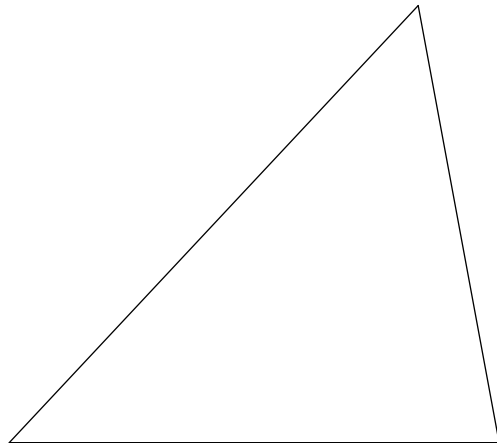
Circumscribe a circle about each triangle.

6)



Inscribe a circle in each triangle.

7)

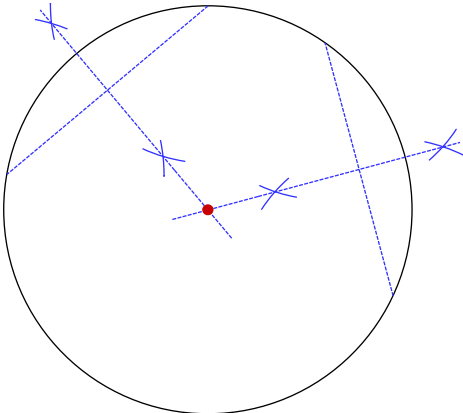


Circle Constructions

Date _____ Period _____

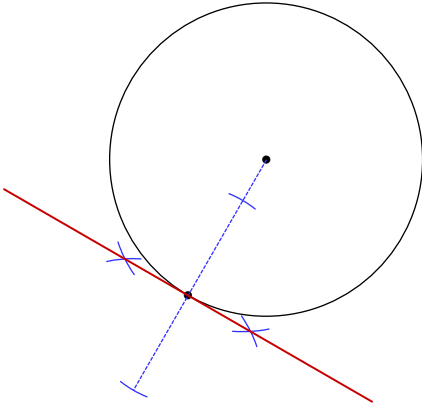
Locate the center of each circle.

1)

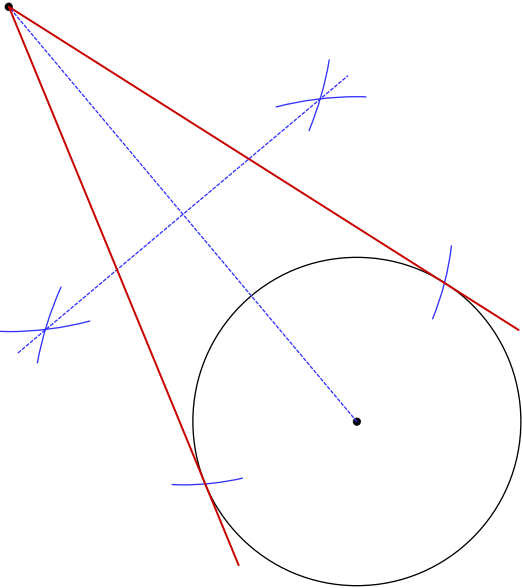


Construct a line segment tangent to the circle through the point given.

2)

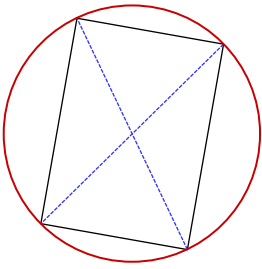


3)



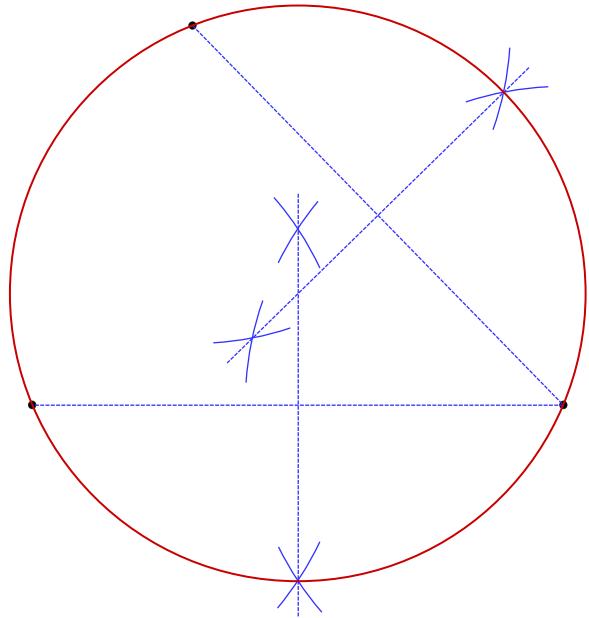
Circumscribe a circle about each rectangle.

4)



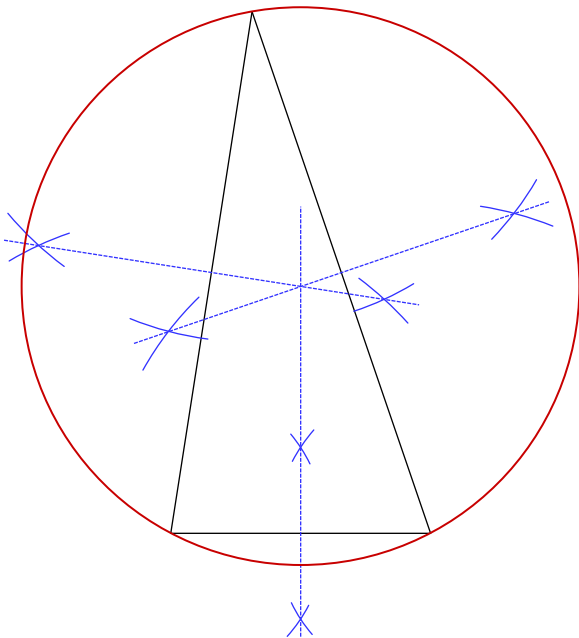
Construct a circle that passes through the points given.

5)



Circumscribe a circle about each triangle.

6)



Inscribe a circle in each triangle.

7)

