eSpyMath Geometry

Solve each equation.

1) $1 + p - 3p = 7$

2) $-4 = 3 - 2a - 5$

3) $-3x - 2x = 5$

4) $-8 = -x + 5x$

5) $-k + 2k = 4$

6) $-7(4 + 5x) = 30 - 6x$

7) $5 - 2(-5x - 8) = 9 + 4x$

8) $34 - 2m = -5 - (-5m + 3)$

9) $3(1 - 2x) = -9 - 2x$

10) $8(5 - 4n) + 7n = -28 - 8n$

11) $-5(1 + 5x) = -2x + 5(12x - 1)$

12) $2(1 - 4v) = -3(v - 10) + 2v$

13) $-6(a - 12) = 2(1 + 2a)$

14) $10(p + 9) = -12(2 - 4p)$

15) $-r - 5r = -3(r - 2) - 5(r + 6)$

Simplify.

16) $\sqrt{196}$

17) $\sqrt{648}$

18) $\sqrt{75}$

19) $\sqrt{810}$

20) $\sqrt{128}$

21) $\sqrt{288}$

22) $\sqrt{63}$

23) $\sqrt{108}$

24) $\sqrt{405}$

25) $\sqrt{80}$

26) $5\sqrt{6} - \sqrt{6}$

27) $-3\sqrt{3} + 4\sqrt{3}$

28) $3\sqrt{8} + 2\sqrt{8}$

29) $5\sqrt{5} - \sqrt{5}$

30) $5\sqrt{7} - 5\sqrt{7}$

31) $-\sqrt{6} + 3\sqrt{24} - 3\sqrt{12}$

32) $-\sqrt{5} - \sqrt{8} - 3\sqrt{2}$

33) $-3\sqrt{2} + 3\sqrt{18} + 2\sqrt{18}$

34) $-2\sqrt{27} + 2\sqrt{3} - 3\sqrt{2}$

35) $-3\sqrt{6} + 2\sqrt{18} - \sqrt{2}$

36) $\sqrt{15} \cdot \sqrt{5}$

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

38) $\sqrt{15} \cdot \sqrt{15}$

39) $\sqrt{3} \cdot \sqrt{2}$

40) $\sqrt{15} \cdot \sqrt{12}$

41) $\sqrt{10}\left(-4\sqrt{2} + 5\right)$

42) $-5\sqrt{3}\left(4 + \sqrt{10}\right)$

43) $2\sqrt{10}\left(-3\sqrt{10} + 5\right)$

44) $-\sqrt{10}\left(-3\sqrt{2} + \sqrt{5}\right)$

45) $\sqrt{5}\left(-5\sqrt{2} + 2\right)$

46) $3\sqrt{30}\left(5\sqrt{6} + 5\right)$

47) $7\sqrt{7}\left(6\sqrt{10} + 6\sqrt{21}\right)$

48) $5\sqrt{15}\left(-2\sqrt{6} + 7\sqrt{3}\right)$

49) $7\sqrt{6}\left(-7\sqrt{14} - 2\sqrt{12}\right)$

50) $3\sqrt{14}\left(2\sqrt{6} + 3\right)$

51) $\dfrac{5\sqrt{15}}{3\sqrt{16}}$

52) $\dfrac{4\sqrt{15}}{5\sqrt{25}}$

53) $\dfrac{3\sqrt{15}}{\sqrt{4}}$

54) $\dfrac{\sqrt{15}}{\sqrt{125}}$

55) $\dfrac{\sqrt{10}}{2\sqrt{45}}$

56) $\frac{\sqrt{3}}{\sqrt{18}}$

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

58) $\frac{\sqrt{3}}{2\sqrt{7}}$

59) $\frac{2\sqrt{49}}{\sqrt{21}}$

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

61) $\frac{-2-5\sqrt{2}}{\sqrt{11}}$

62) $\frac{4+\sqrt{3}}{4\sqrt{12}}$

63) $\frac{3-\sqrt{5}}{5\sqrt{11}}$

64) $\frac{5\sqrt{2}-3}{2\sqrt{12}}$

65) $\frac{-1+\sqrt{5}}{4\sqrt{5}}$

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

66) 

67) 

68) 

69) 

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

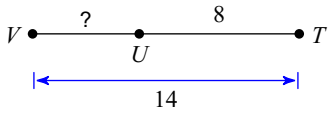
70)

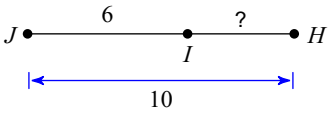
71)

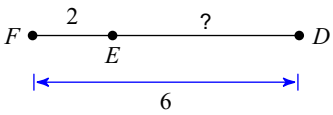
72) 

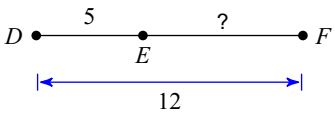
73) 

Find the length indicated.

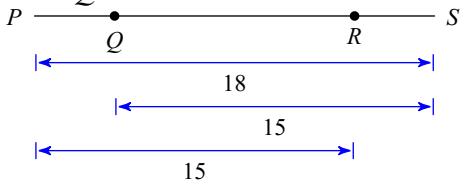
74) 

75) 

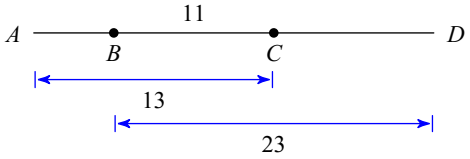
76) 

77) 

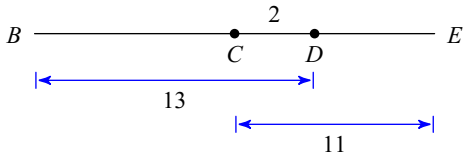
78) Find QR



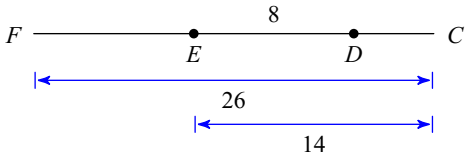
79) Find AD



80) Find BE

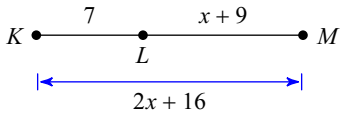


81) Find FD

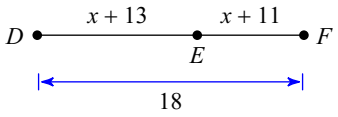


Solve for x.

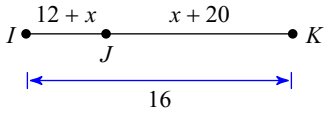
82)



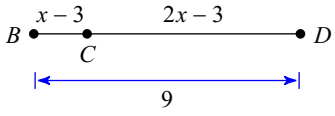
83)



84)



85)



Points A, B, C, and D are collinear and positioned in that order. Find the length indicated.

86) $BC = 75$, $BD = x + 149$, $AD = x + 227$, and $AC = x + 162$. Find BD.

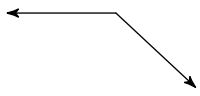
87) Find BC if $AC = 12x - 1093$, $BC = 9x - 820$, $AD = 4x - 242$, and $BD = 126$.

88) Find BC if $CD = 9x - 56$, $AD = 16x - 98$, $BC = 11x - 114$, and $AB = 8$.

89) $BD = -139 + 11x$, $BC = 21$, $AC = 9x - 132$, and $AD = 4x + 60$. Find BD.

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

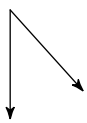
90)



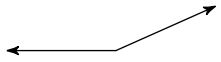
91)

92)

93)

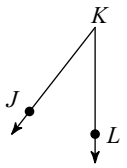


94)

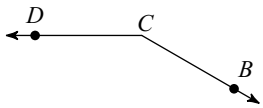


Name the vertex and sides of each angle.

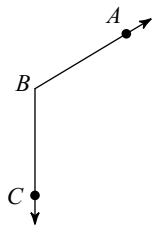
95)



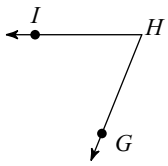
96)



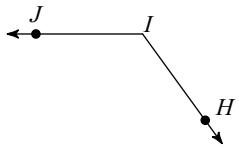
97)



98)

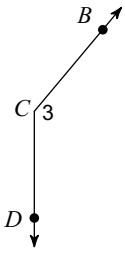


99)

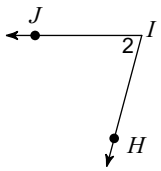


Name each angle in four ways.

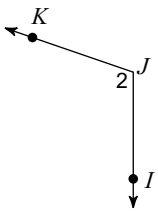
100)



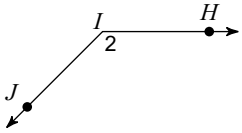
101)



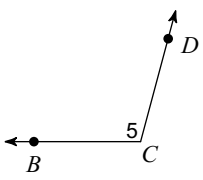
102)



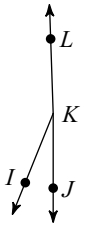
103)



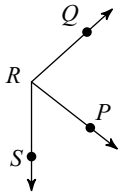
104)



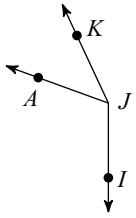
105) Find $m\angle JKL$ if $m\angle IKL = 156°$ and $m\angle JKI = 22°$.



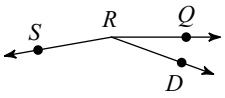
106) Find $m\angle PRS$ if $m\angle QRP = 80°$ and $m\angle QRS = 132°$.



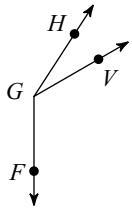
107) $m\angle AJK = 45°$ and $m\angle IJA = 110°$. Find $m\angle IJK$.



108) $m\angle QRD = 20°$ and $m\angle QRS = 170°$. Find $m\angle DRS$.

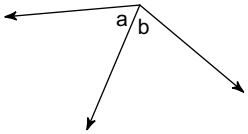


109) $m\angle HGF = 147°$ and $m\angle HGV = 27°$. Find $m\angle VGF$.

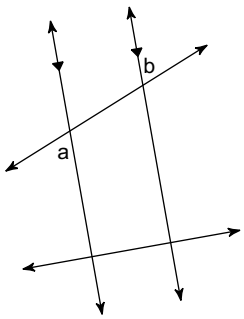


Name the relationship: complementary, linear pair, vertical, adjacent, alternate interior, corresponding, or alternate exterior.

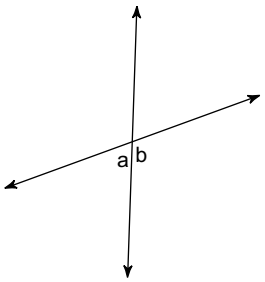
110)



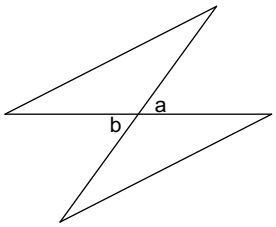
111)



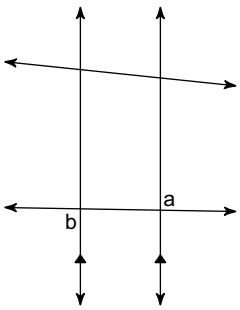
112)



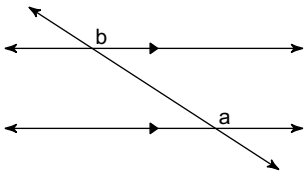
113)



114)



115)



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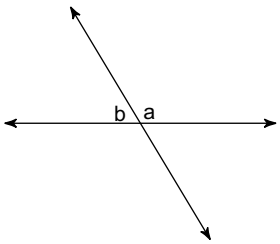
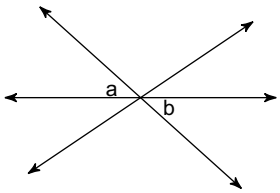
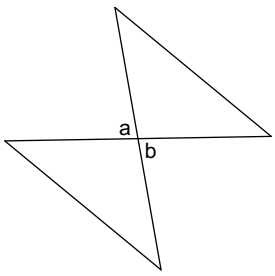


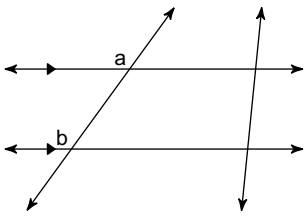
117)



118)

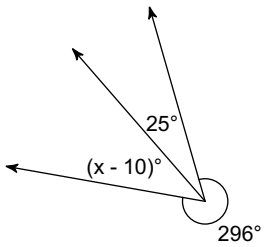


119)

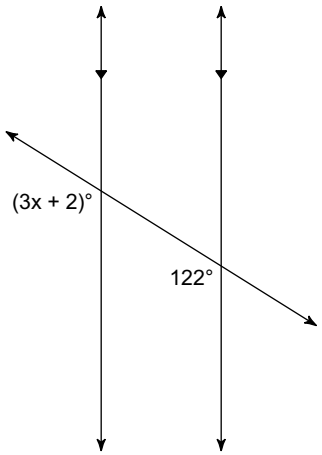


Find the value of x.

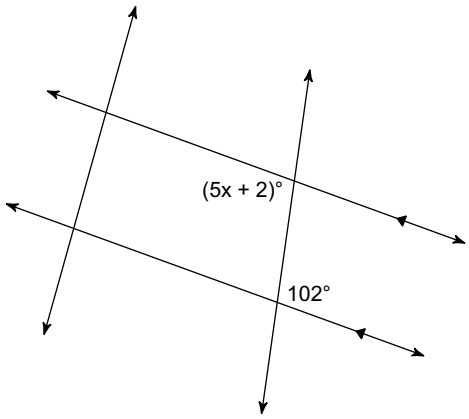
120)



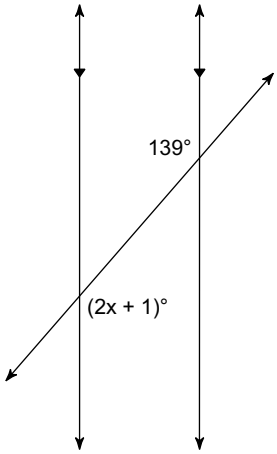
121)



122)



123)



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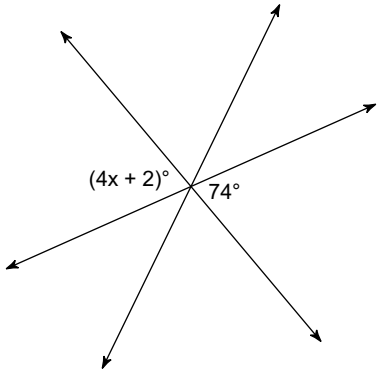
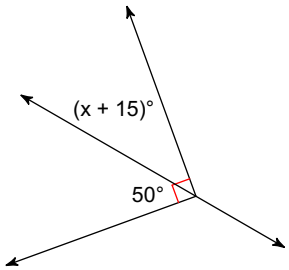
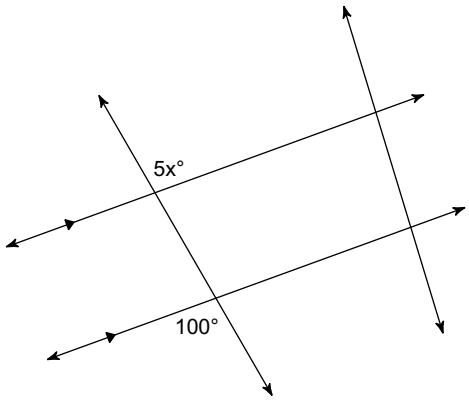


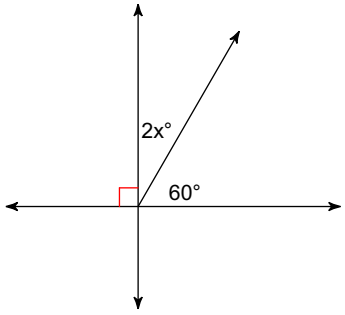
125)



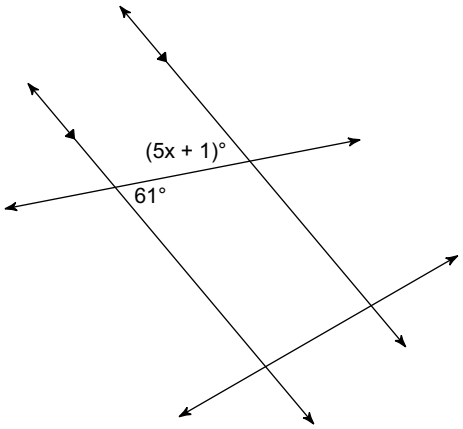
126)



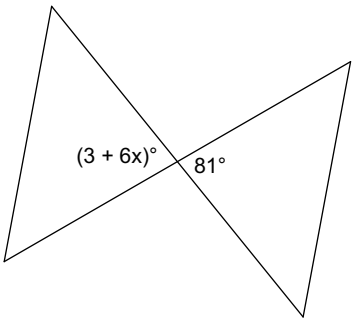
127)



128)

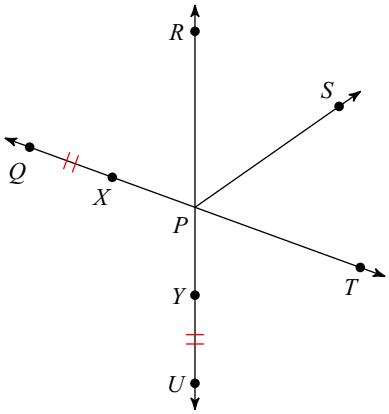


129)



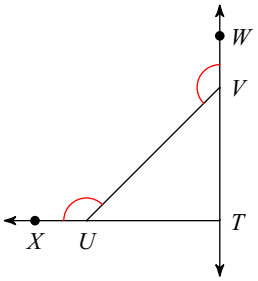
Write if the statement given is indicated by the marks on the diagram.

130)



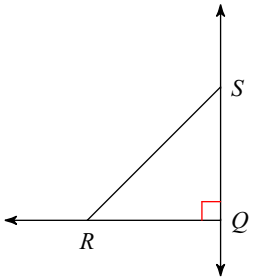
$\overline{UY} \cong \overline{QX}$

131)



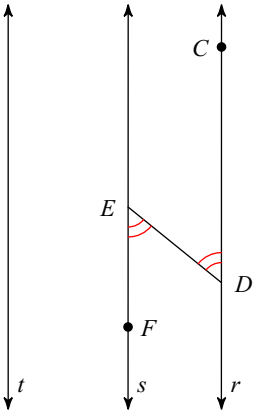
$\angle VUX \cong \angle UVW$

132)



$\angle RQS \cong \angle RSQ$

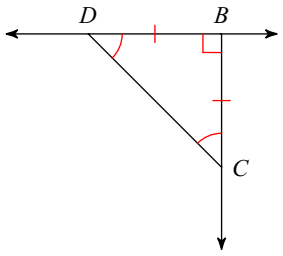
133)



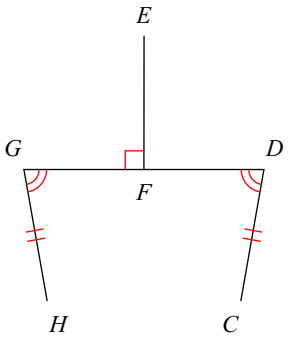
$\overline{FE} \cong \overline{EC}$

List all information given by the marks on the diagram.

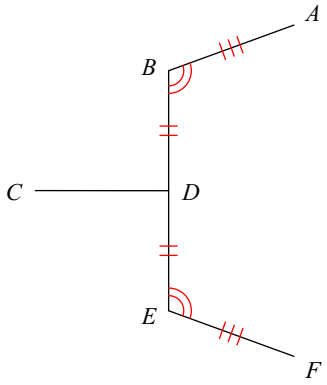
134)



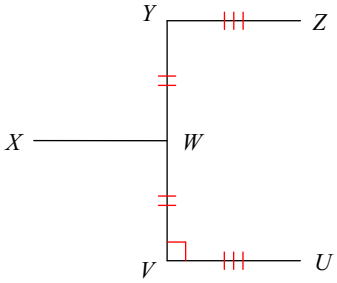
135)



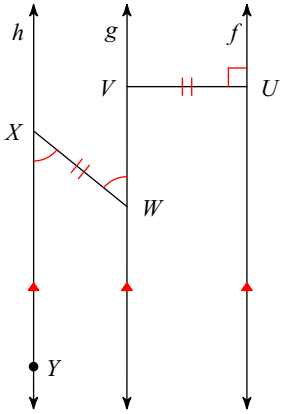
136)



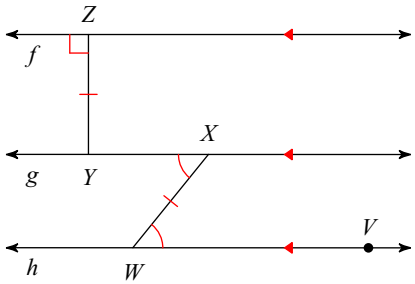
137)



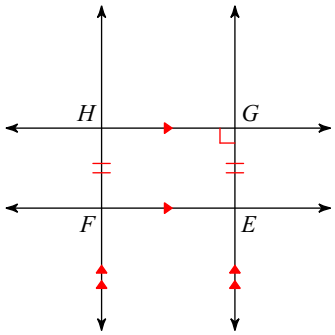
138)



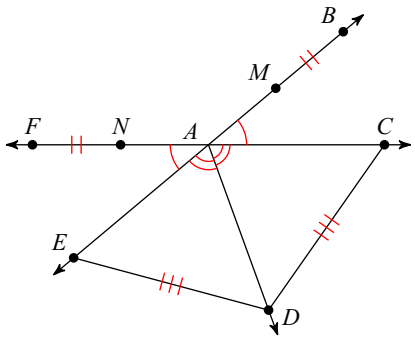
139)



140)

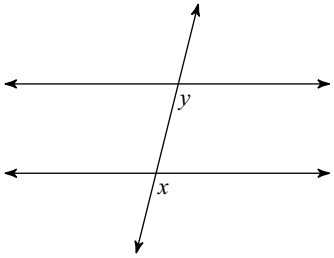


141)

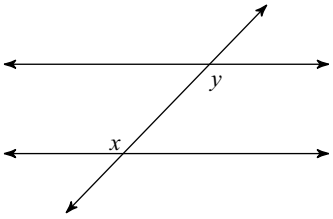


Identify each pair of angles as corresponding, alternate interior, alternate exterior, or consecutive interior.

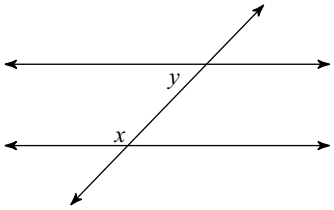
142)



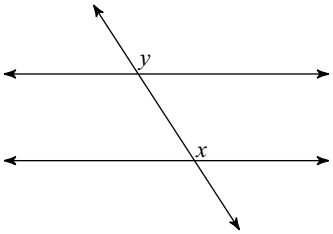
143)



144)

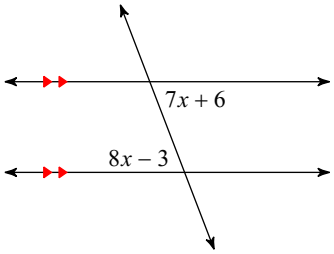


145)

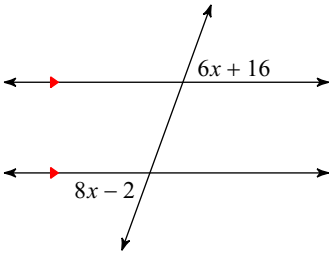


Solve for *x*.

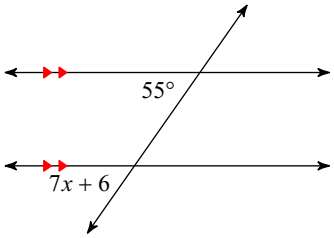
146)



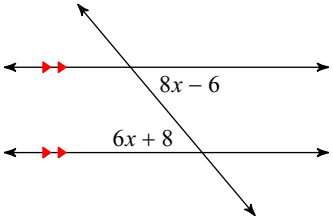
147)



148)

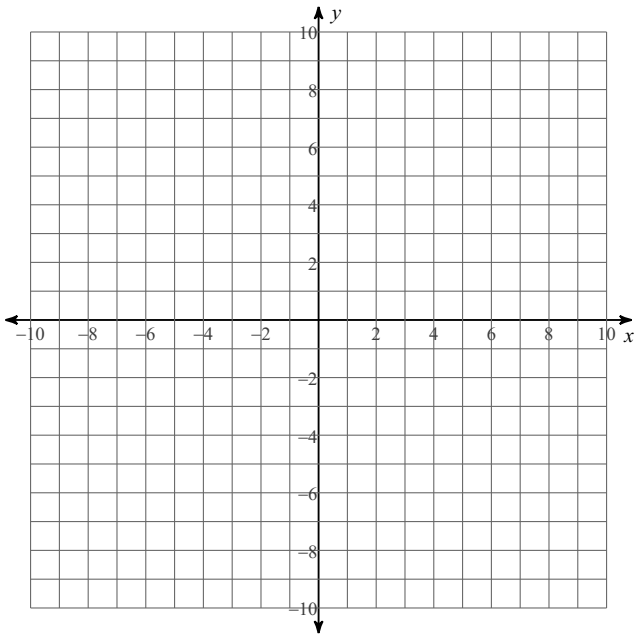


149)

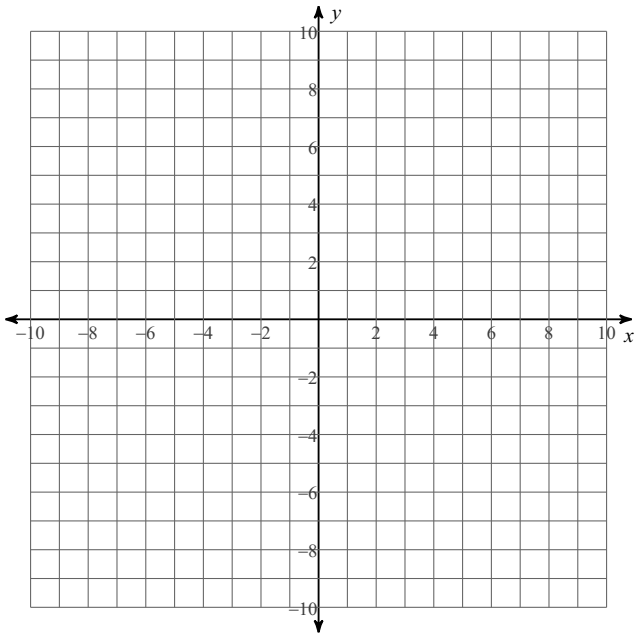


Plot each point.

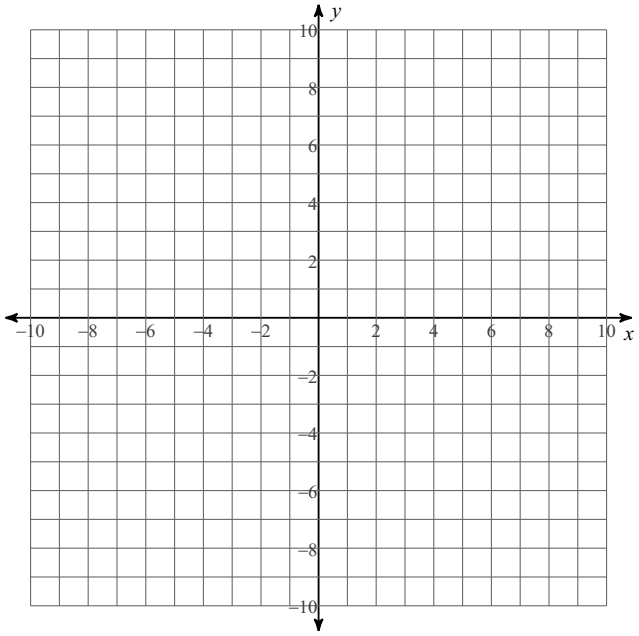
150) $F(5, -5)$ $E(0, -3)$ $D(10, -8)$
$C(5, 1)$ $B(-5, -2)$



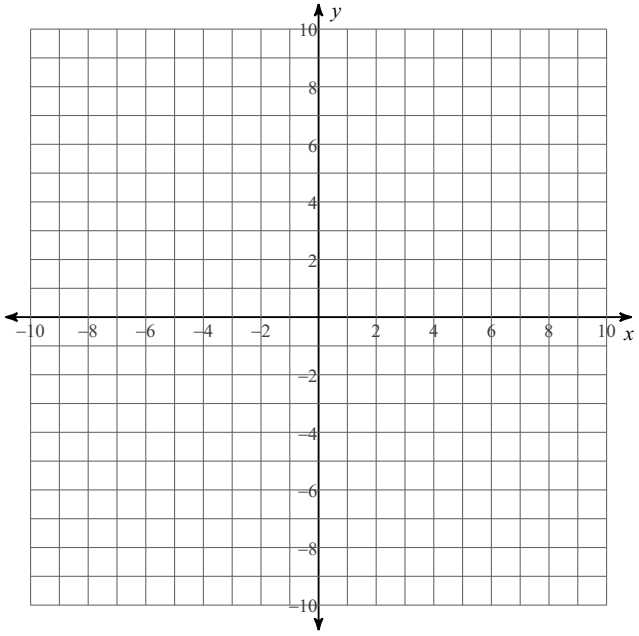
151) $F(0, -1)$ $G(-6, 4)$ $H(8, 4)$
$I(1, -6)$ $J(-2, -2)$



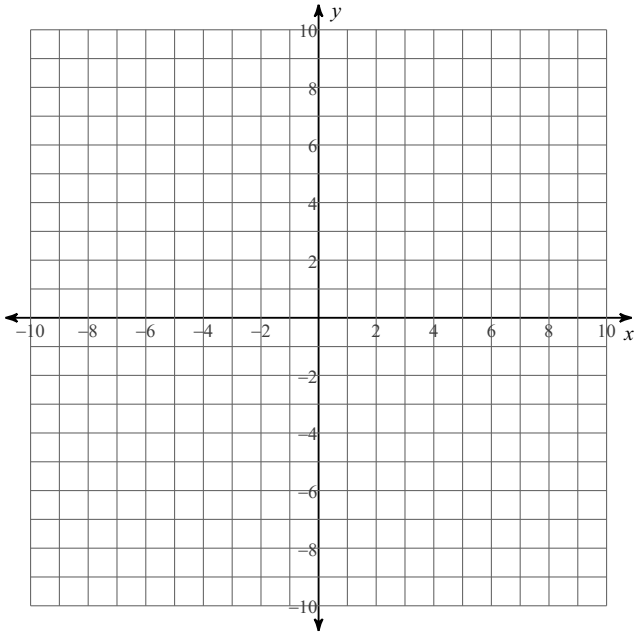
152) $A(-7, -5)$ $B(7, -6)$ $C(-1, 2)$
$D(0, 9)$ $E(-7, 1)$



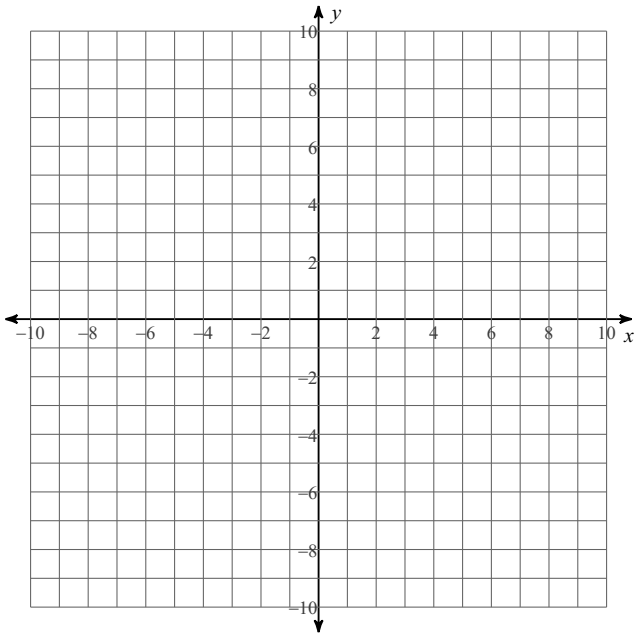
153) $G(9, 9)$ $F(-8, 0)$ $E(-7, -9)$
$D(10, 5)$ $C(5, -1)$



154) $F(-4, 6)$ $G(10, 8)$ $H(-7, -4)$
$I(6, 9)$ $J(-8, 1)$

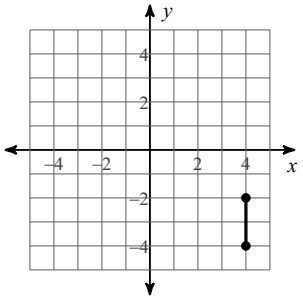


155) $R(-7, -2)$ $S(-10, -2)$ $T(-2, -8)$
$U(-4, 9)$ $V(5, 1)$

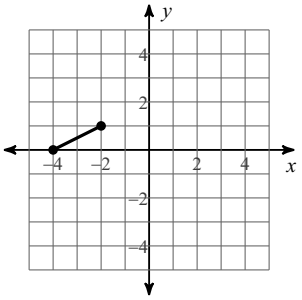


Find the midpoint of each line segment.

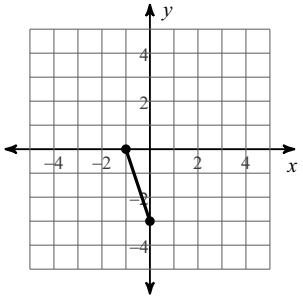
156)



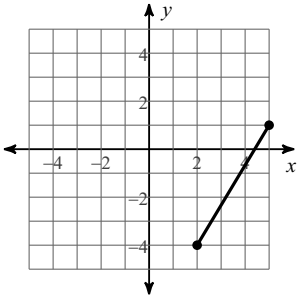
157)



158)



159)



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

160) $(3, 2),\ (1, 4)$

161) $(-5, 1),\ (3, -5)$

162) $(5, 0),\ (-3, -4)$

163) $(-3, -4),\ (4, 5)$

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

164) Endpoint: $(1, -6)$, midpoint: $(0, 6)$

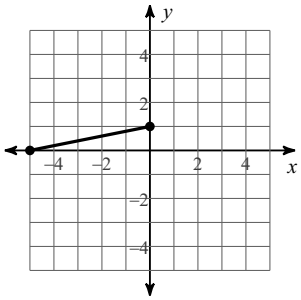
165) Endpoint: $(0, 3)$, midpoint: $(-2, -3)$

166) Endpoint: $(6, 0)$, midpoint: $(-2, 0)$

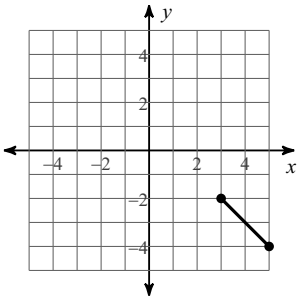
167) Endpoint: $(-6, 1)$, midpoint: $(-6, -6)$

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

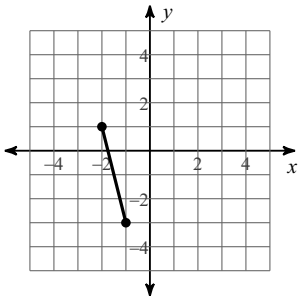
168)



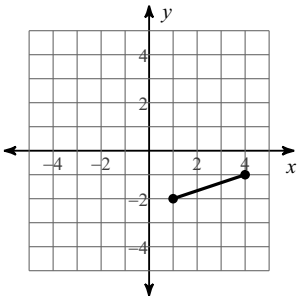
169)



170)



171)



172) $(-6, 6),\ (-4, 3)$

173) $(-5, 2),\ (3, 1)$

174) $(-2, -6),\ (-4, -4)$

175) $(5, -1),\ (-1, 1)$

Find the slope of each line.

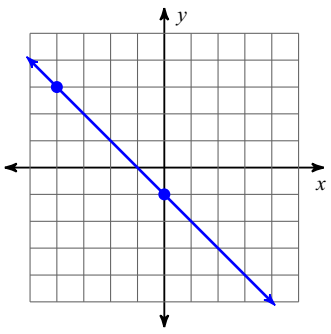
176) $y = \frac{1}{2}x + 1$

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

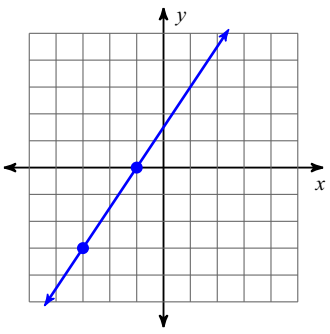
178) $y = -2$

179) $y = \frac{2}{5}x + 3$

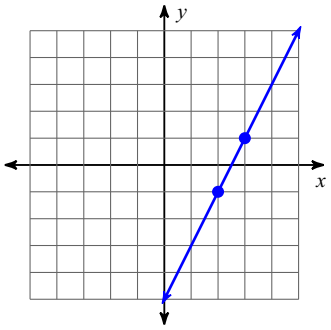
180)



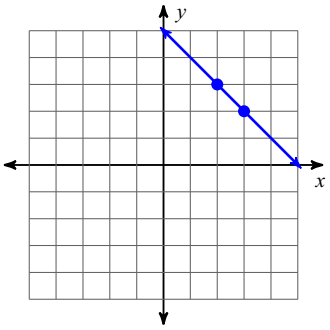
181)



182)



183)



Find the slope of the line through each pair of points.

184) $(8, 18), (12, -5)$

185) $(15, 0), (10, 20)$

186) $(-15, 0), (13, 0)$

187) $(2, -19), (16, 18)$

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

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

189) $y = \frac{1}{5}x + 3$

190) $x = 5$

191) $x = -1$

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

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

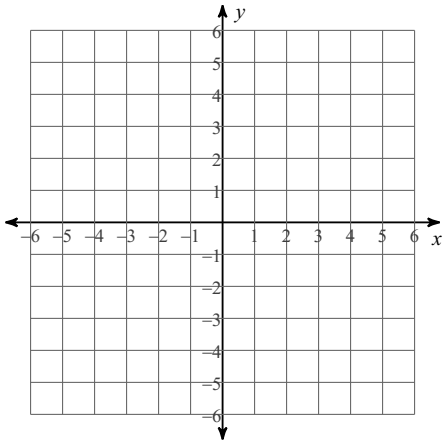
193) $y = -\frac{1}{2}x + 3$

194) $y = \frac{3}{5}x - 1$

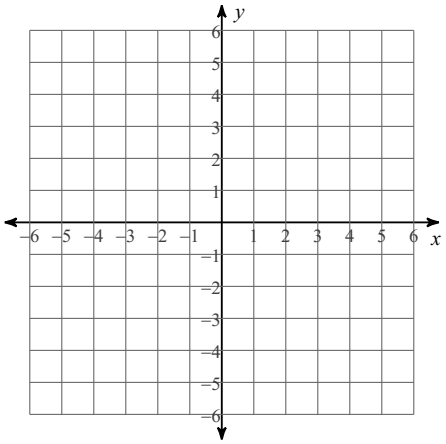
195) $y = \frac{4}{3}x - 3$

Sketch the graph of each line.

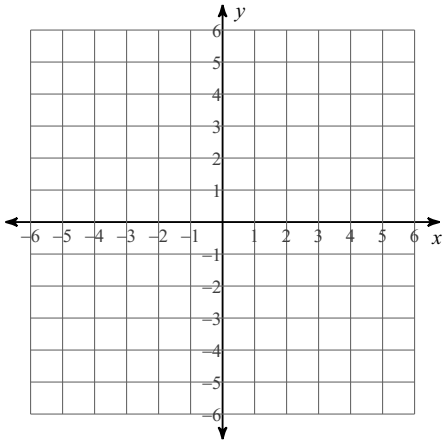
196) x-intercept = 3, y-intercept = –1



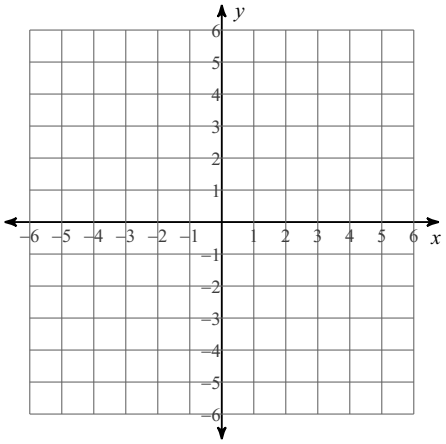
197) x-intercept = 5, y-intercept = –5



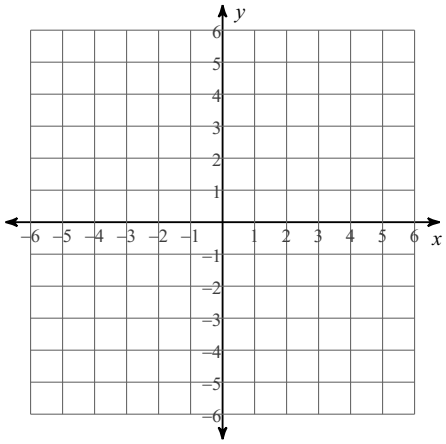
198) x-intercept = –2, y-intercept = 3



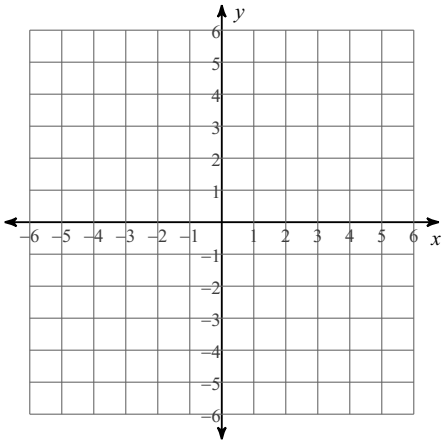
199) x-intercept = –5, y-intercept = –4



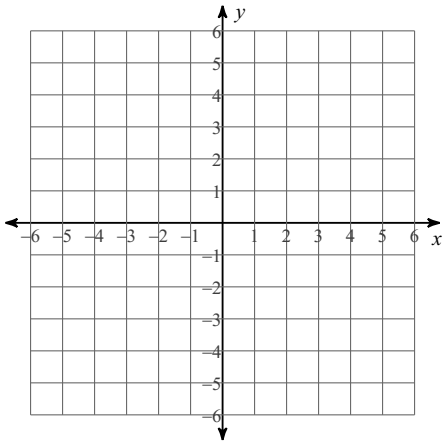
200) $4x + 5y = -20$



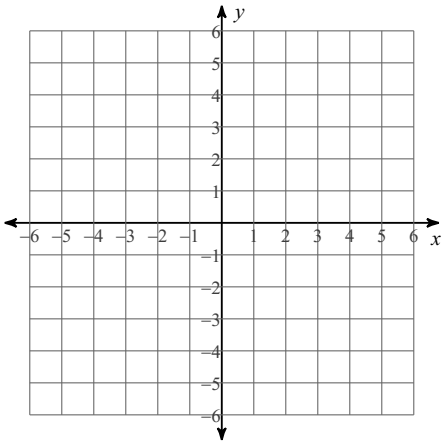
201) $x + y = 5$



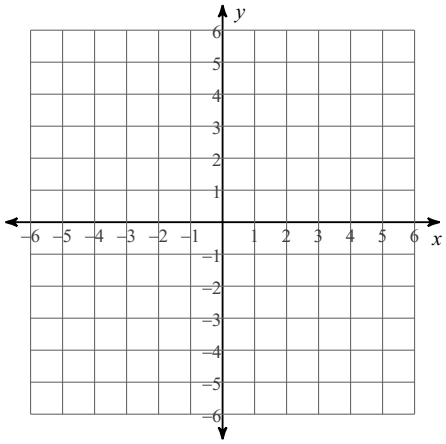
202) $2x - y = 1$



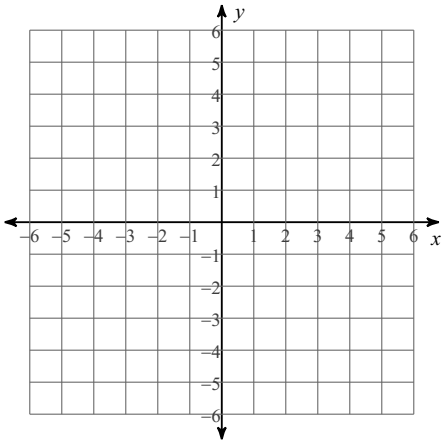
203) $x + 4y = 20$



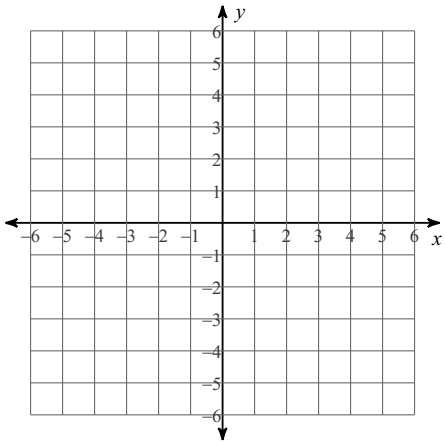
204) $y = -3x - 4$



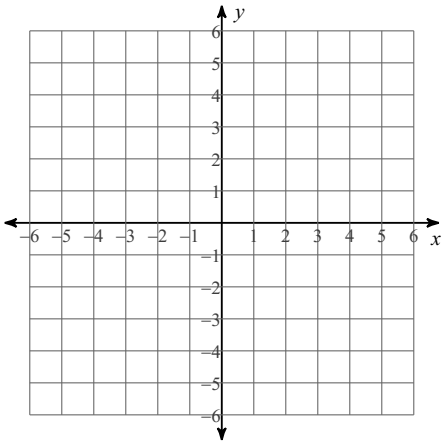
205) $y = 2x - 3$



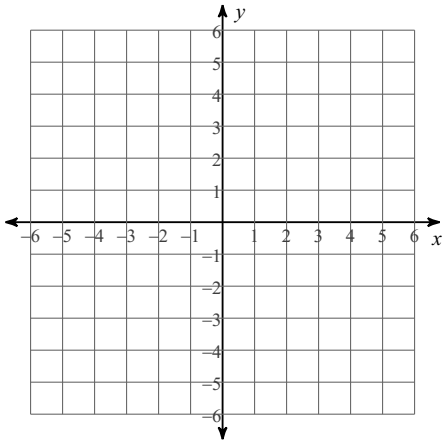
206) $y = -3$



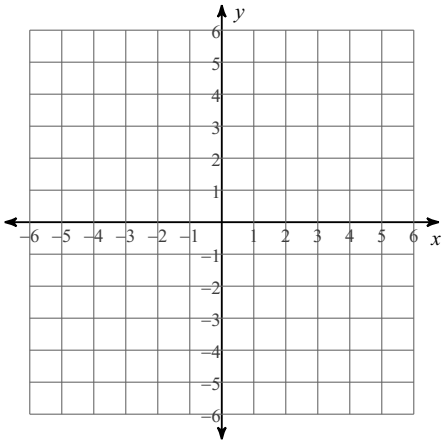
207) $y = -2x - 3$



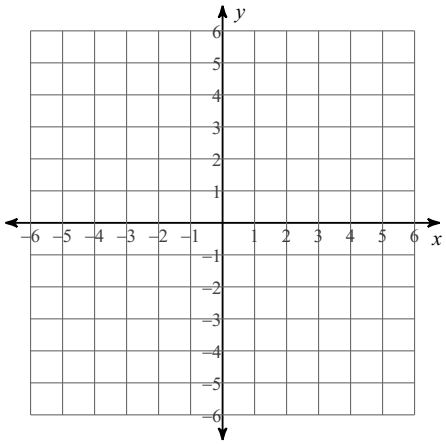
208) $3 = -3x$



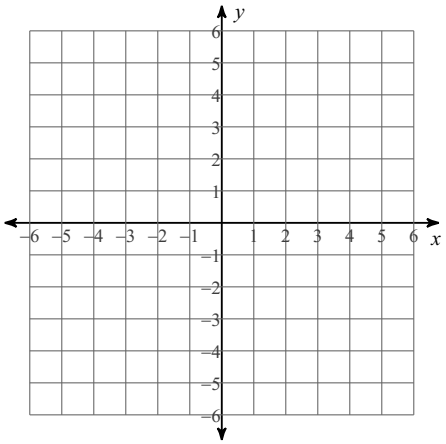
209) $5 + y = 0$



210) $8 - 3x = 2y$

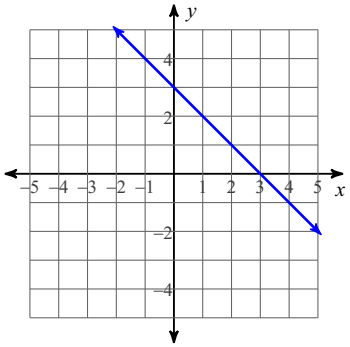


211) $-5y = -3x - 5$

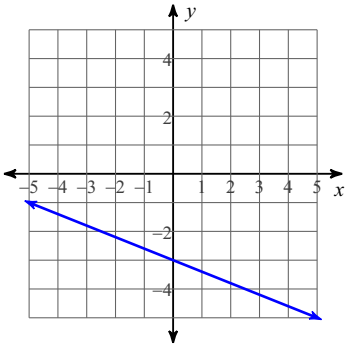


Write the slope-intercept form of the equation of each line.

212)



213)



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

214) Slope = 1, y-intercept = 3

215) Slope $= -\frac{4}{5}$, y-intercept = 3

Write the slope-intercept form of the equation of each line.

216) $4x - 3y = 15$

217) $2x + y = 5$

218) $y - 2 = x - 3$

219) $0 = x - 4$

220) $-3x - 3 = -y$

221) $18x = 32 - 10y$

Write the slope-intercept form of the equation of the line through the given point with the given slope.

222) through: $(5, -4)$, slope $= -\frac{6}{5}$

223) through: $(2, 1)$, slope = 3

Write the slope-intercept form of the equation of the line through the given points.

224) through: $(-1, 5)$ and $(1, -1)$

225) through: $(0, 1)$ and $(-5, -4)$

Write the slope-intercept form of the equation of the line described.

226) through: $(4, 0)$, parallel to $y = \frac{3}{4}x$

227) through: $(2, 3)$, parallel to $y = \frac{2}{5}x - 1$

228) through: $(2, 3)$, perp. to $y = -x + 1$

229) through: $(-5, 2)$, perp. to $y = -\frac{5}{3}x - 1$

Write the point-slope form of the equation of the line described.

230) through: $(-4, 2)$, perp. to $y = -1$

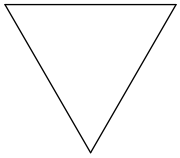
231) through: $(-5, -5)$, perp. to $y = -\frac{7}{6}x - 1$

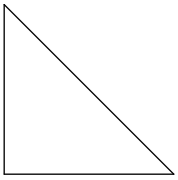
Write the standard form of the equation of the line described.

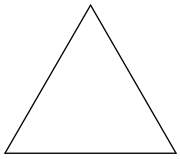
232) through: $(5, -1)$, perp. to $y = -\frac{5}{2}x - 1$

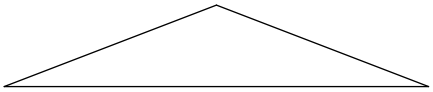
233) through: $(-1, -1)$, perp. to $y = \frac{3}{2}x + 2$

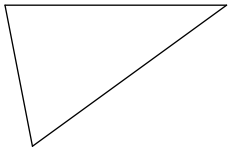
Classify each triangle by its angles.

234) 

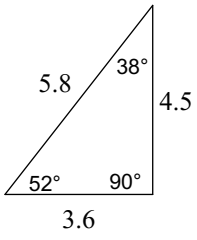
235) 

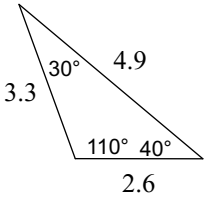
236) 

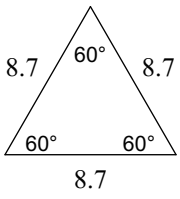
237) 

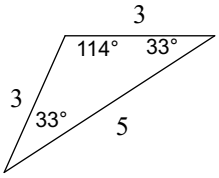
238) 

Classify each triangle by its angles and sides.

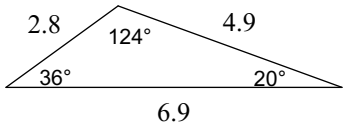
239) 

240) 

241) 

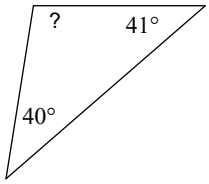
242) 

243)

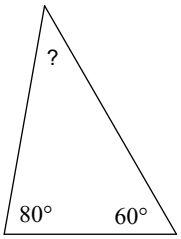


Find the measure of each angle indicated.

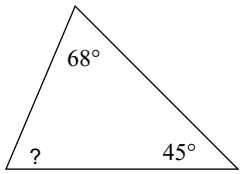
244)



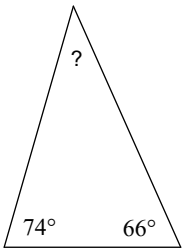
245)



246)

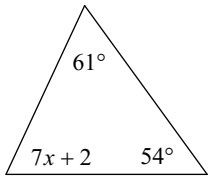


247)

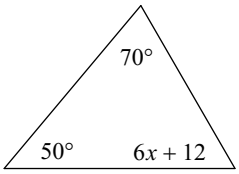


Solve for *x*.

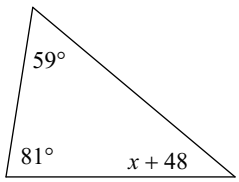
248)



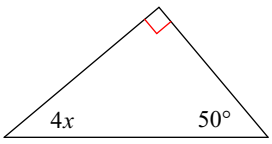
249)



250)

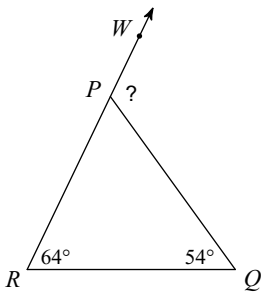


251)

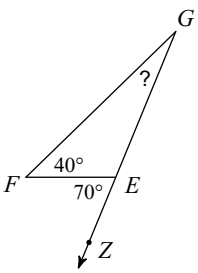


Find the measure of each angle indicated.

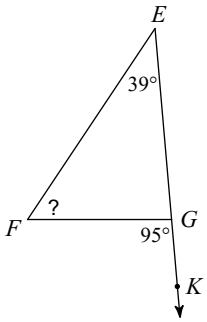
252)



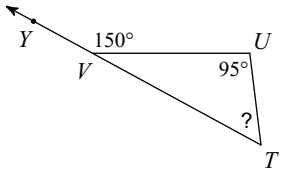
253)



254)

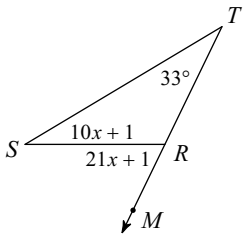


255)

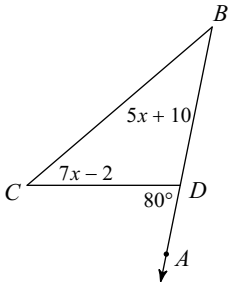


Solve for *x*.

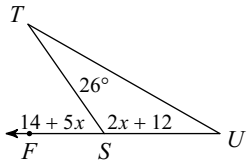
256)



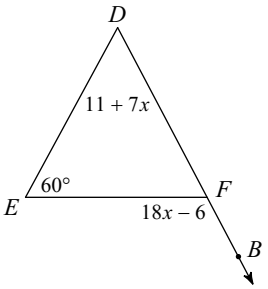
257)



258)

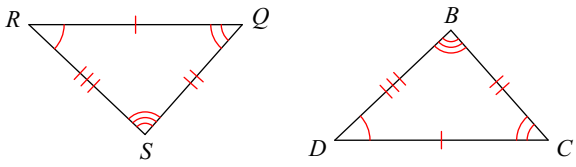


259)



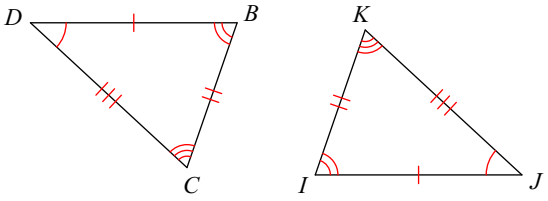
Complete each congruence statement by naming the corresponding angle or side.

260) $\triangle RQS \cong \triangle DCB$



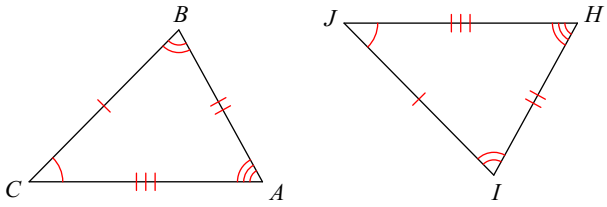
$\overline{QS} \cong ?$

261) $\triangle DBC \cong \triangle JIK$



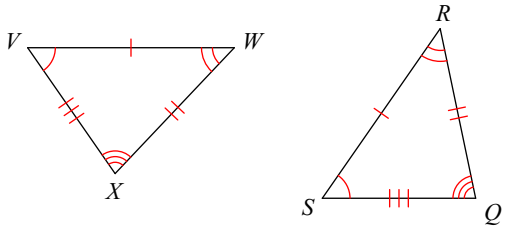
$\overline{CD} \cong ?$

262) $\triangle CBA \cong \triangle JIH$



$\overline{BA} \cong ?$

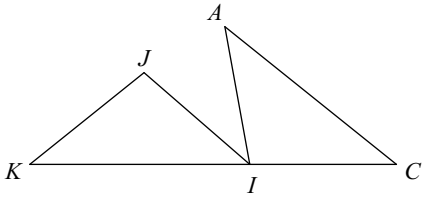
263) $\triangle VWX \cong \triangle SRQ$



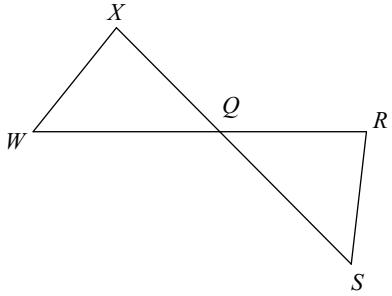
$\angle X \cong ?$

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

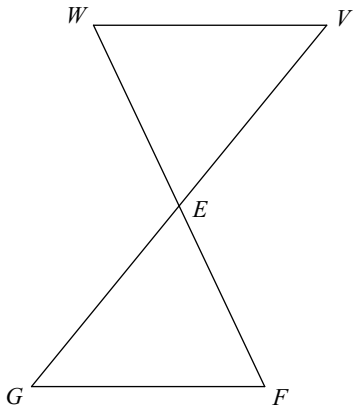
264) $\triangle KJI \cong \triangle CIA$



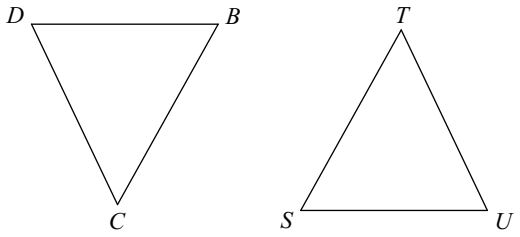
265) $\triangle QRS \cong \triangle QXW$



266) $\triangle EFG \cong \triangle EWV$

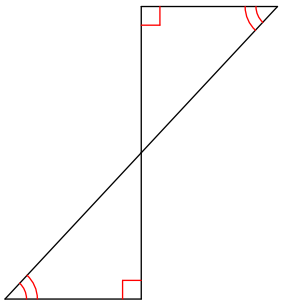


267) $\triangle BCD \cong \triangle STU$

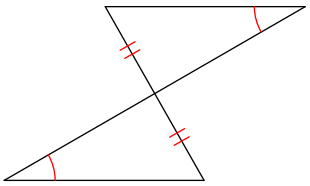


Determine if the two triangles are congruent. If they are, state how you know.

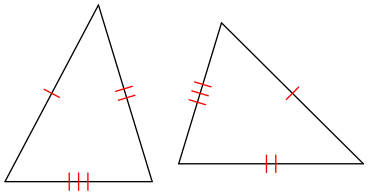
268)



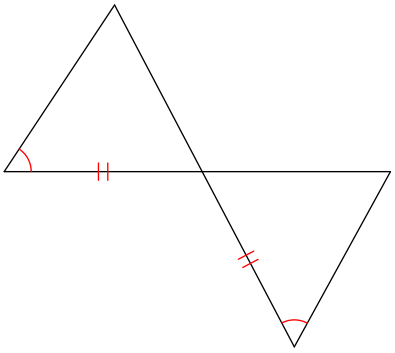
269)



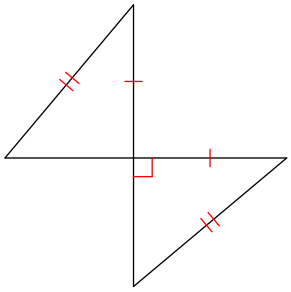
270)



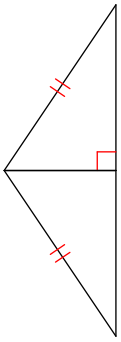
271)



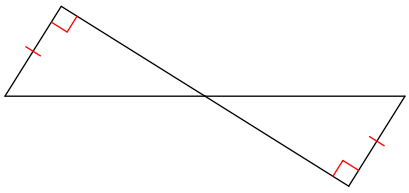
272)



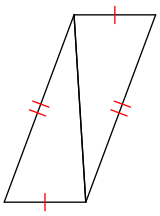
273)



274)

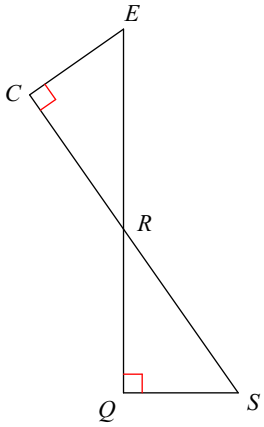


275)

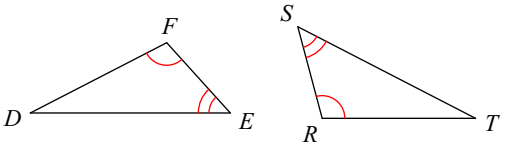


State what additional information is required in order to know that the triangles are congruent for the reason given.

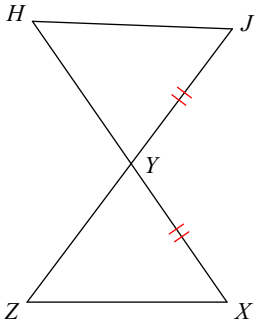
276) HA



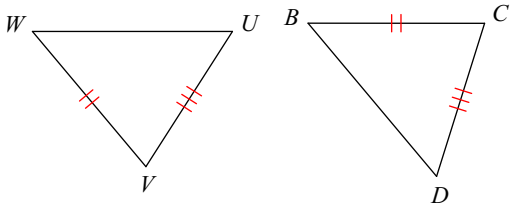
277) ASA



278) AAS

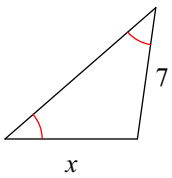


279) SAS

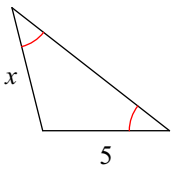


Find the value of *x*.

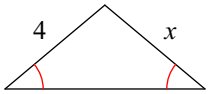
280)



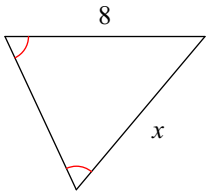
281)



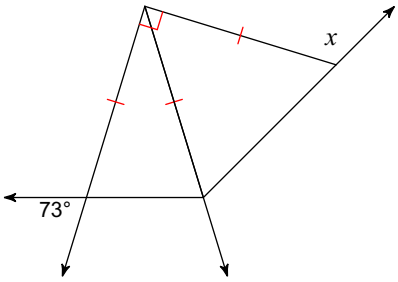
282)



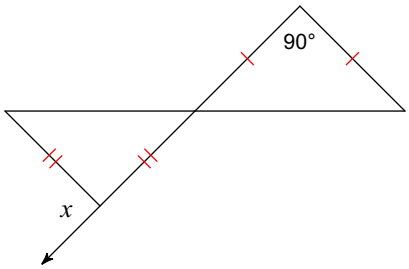
283)



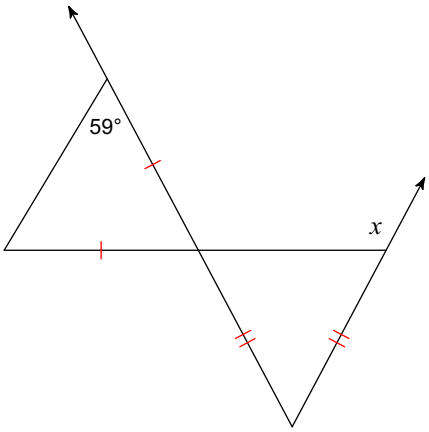
284)



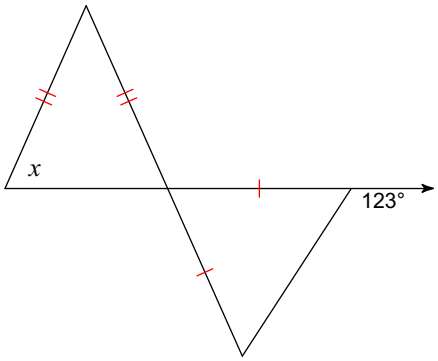
285)



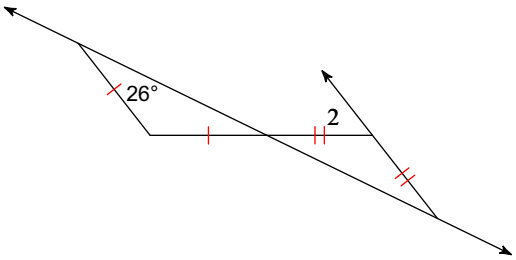
286)



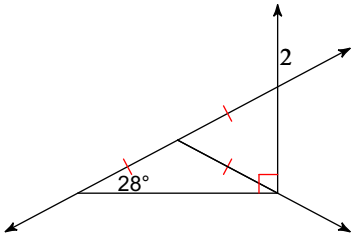
287)



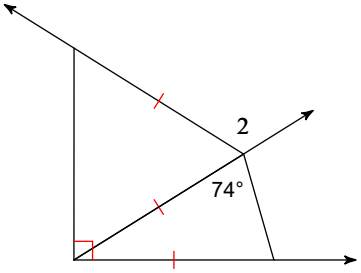
288) $m\angle 2 = 7x - 4$



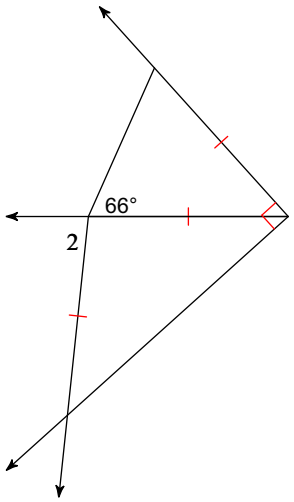
289) $m\angle 2 = 7x - 1$



290) $m\angle 2 = x + 126$

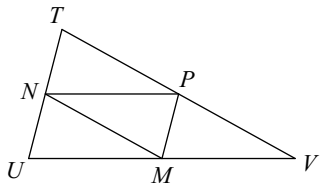


291) $m\angle 2 = x + 94$



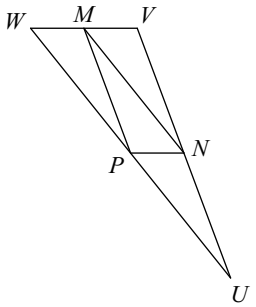
In each triangle, M, N, and P are the midpoints of the sides. Name a segment parallel to the one given.

292)



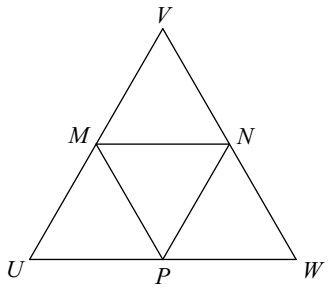
$\overline{NP} \parallel$ ___

293)



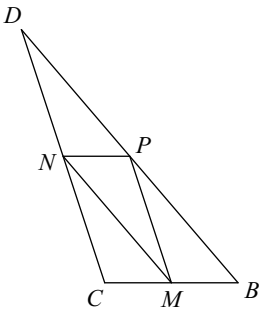
___ $\parallel \overline{WV}$

294)



___ $\parallel \overline{MP}$

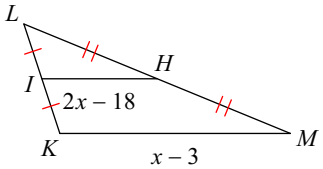
295)



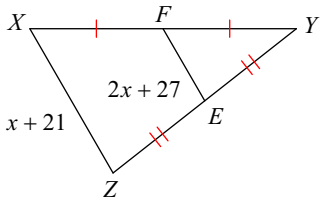
$\overline{BD} \parallel$ ___

Solve for *x*.

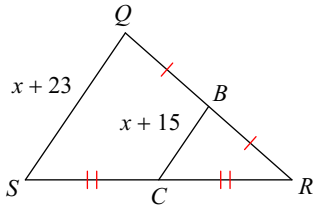
296)



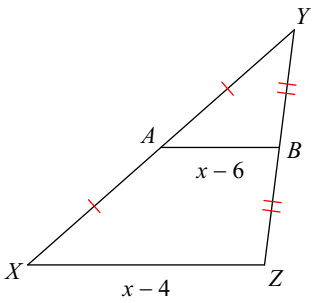
297)



298)

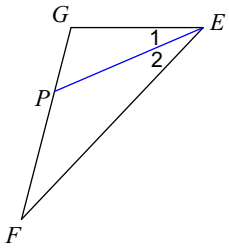


299)

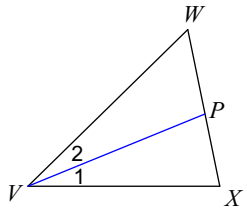


Each figure shows a triangle with one of its angle bisectors.

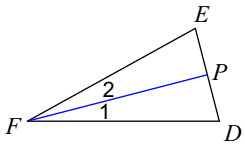
300) Find $m\angle 2$ if $m\angle 1 = 23°$.



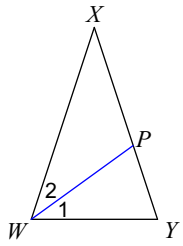
301) Find $m\angle XVW$ if $m\angle 1 = 22°$.



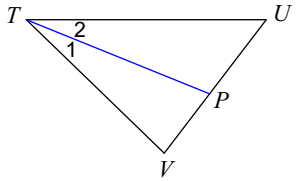
302) $m\angle 2 = 14°$. Find $m\angle 1$.



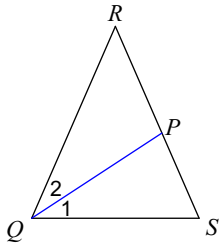
303) $m\angle 1 = 36°$. Find $m\angle YWX$.



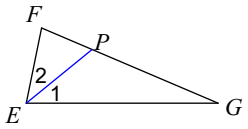
304) Find x if $m\angle 2 = 2x + 6$ and $m\angle 1 = x + 14$.



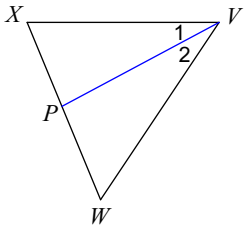
305) $m\angle 1 = 33x$ and $m\angle 2 = 32x + 1$. Find x.



306) $m\angle 2 = 8x + 7$ and $m\angle 1 = 10x - 1$. Find x.

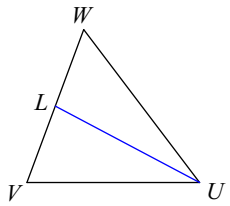


307) Find x if $m\angle 2 = 14x$ and $m\angle XVW = 29x - 2$.

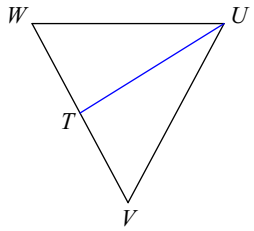


Each figure shows a triangle with one or more of its medians.

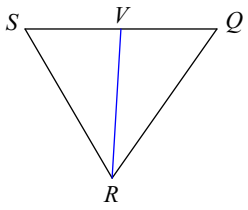
308) Find LV if $WV = 2.4$



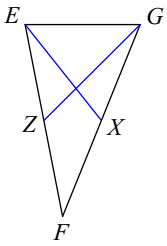
309) Find TV if $WV = 2$



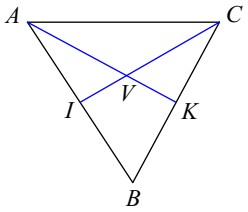
310) Find QS if $VS = 2.85$



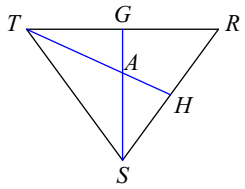
311) Find XG if $FG = 6$



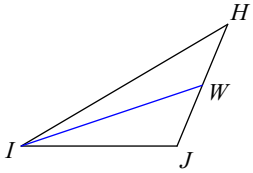
312) Find x if $CV = 4x + 2$ and $VI = x + 4$



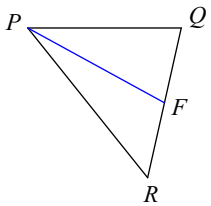
313) Find x if $TH = 1 + x$ and $AH = x - 1$



314) Find x if $WH = 2x - \frac{3}{2}$ and $WJ = \frac{2x + 3}{2}$

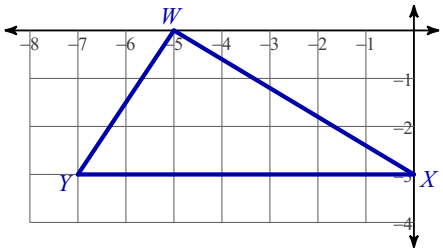


315) Find x if $RQ = x + 4$ and $FQ = 2x - 4$

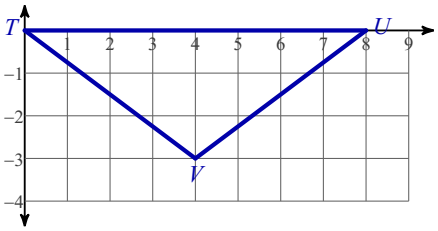


Find coordinates of the centroid of each triangle.

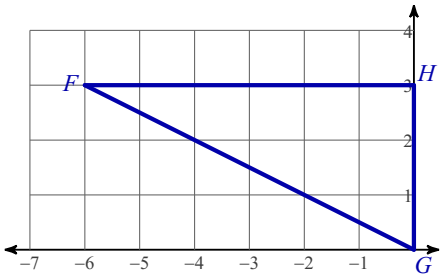
316)



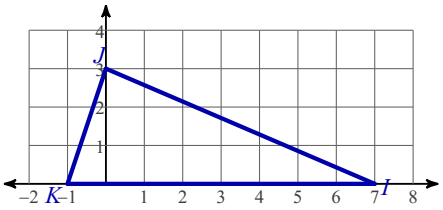
317)



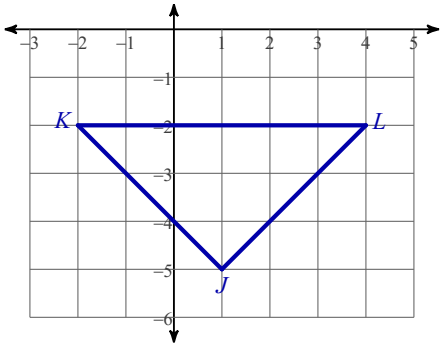
318)



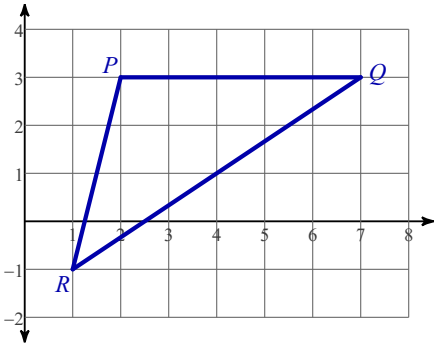
319)



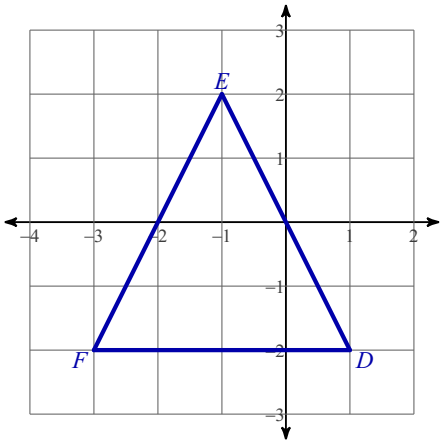
320)



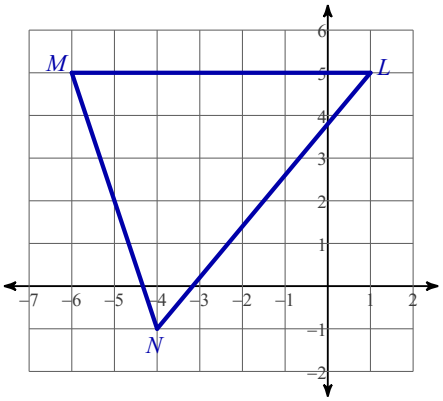
321)



322)



323)



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

324) 5, 2, 7

325) 9, 3, 6

326) 5, 9, 3

327) 7, 19, 10

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

328) 7, 8

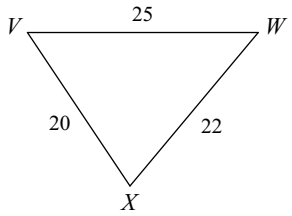
329) 6, 6

330) 9, 12

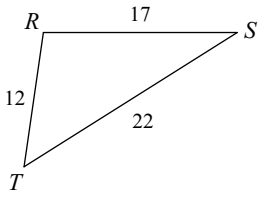
331) 12, 6

Name the largest and smallest angle in each triangle.

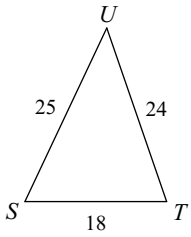
332)



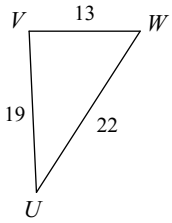
333)



334)

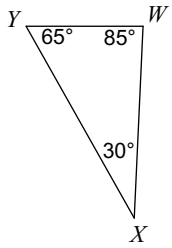


335)

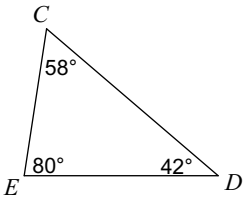


Order the sides of each triangle from shortest to longest.

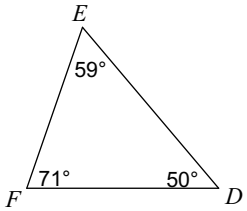
336)



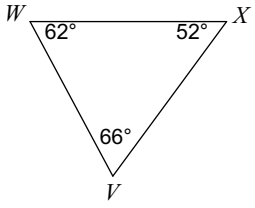
337)



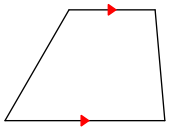
338)

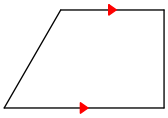


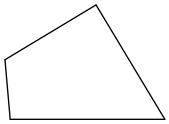
339)

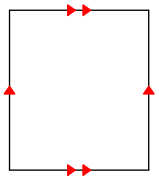


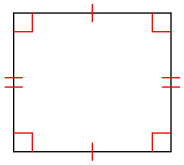
State the most specific name for each figure.

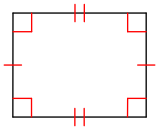
340) 

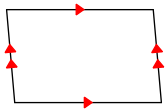
341) 

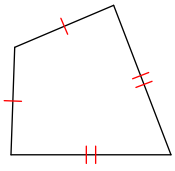
342) 

343) 

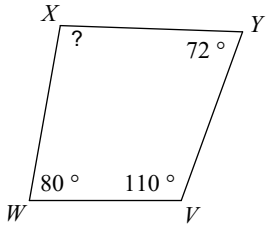
344) 

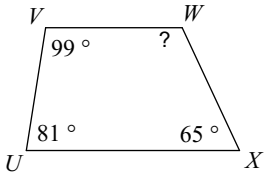
345) 

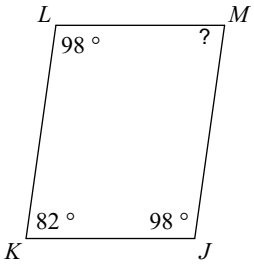
346) 

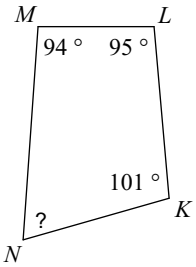
347) 

Find the measure of each angle indicated.

348) 

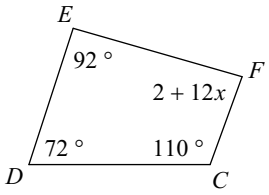
349) 

350) 

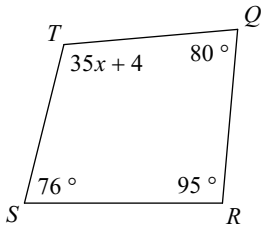
351) 

Solve for *x*.

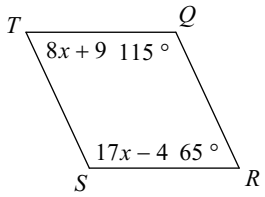
352)



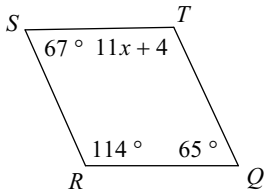
353)



354)

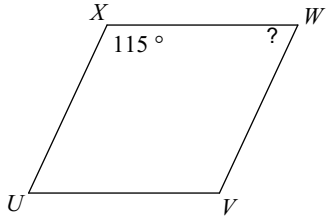


355)

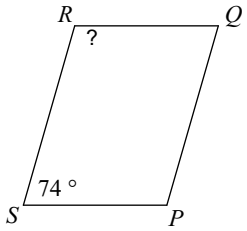


Find the measurement indicated in each parallelogram.

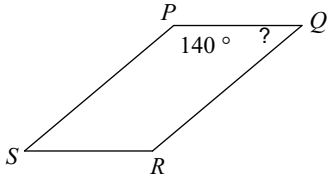
356)



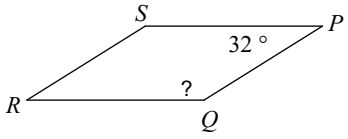
357)



358)

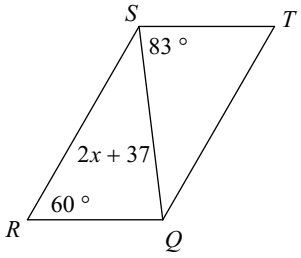


359)

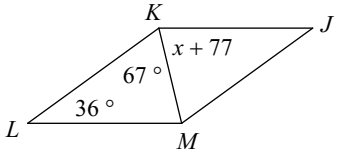


Solve for *x*. Each figure is a parallelogram.

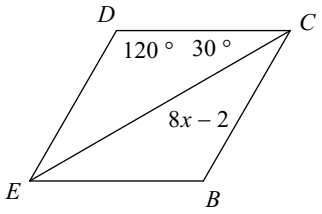
360)



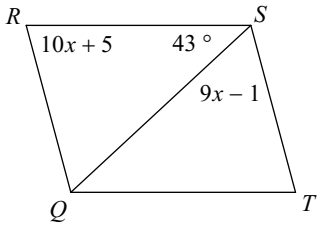
361)



362)

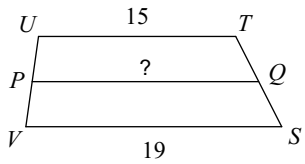


363)

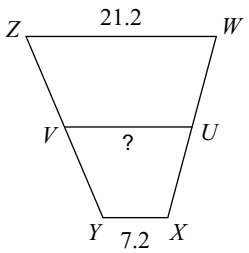


Find the length of the median of each trapezoid.

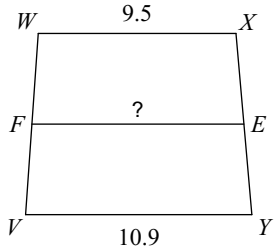
364)



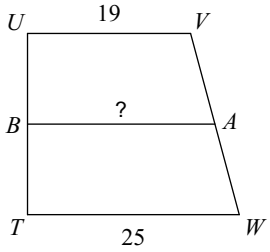
365)



366)

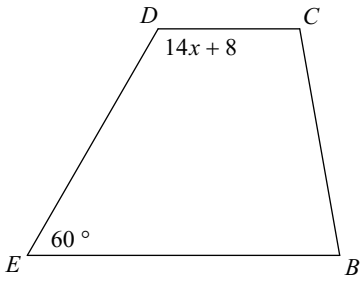


367)

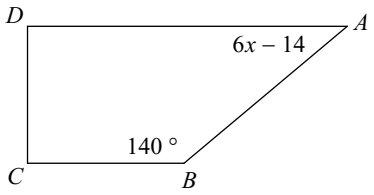


Solve for *x*. Each figure is a trapezoid.

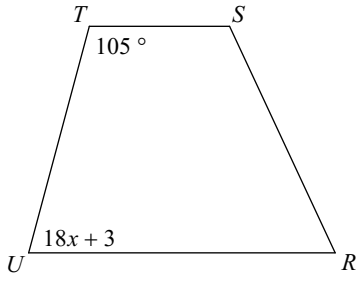
368)



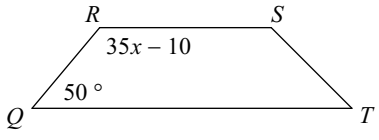
369)



370)

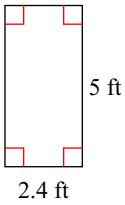


371)

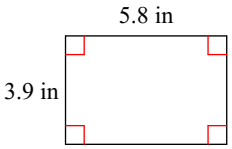


Find the area of each.

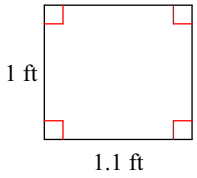
372)



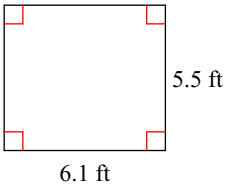
373)



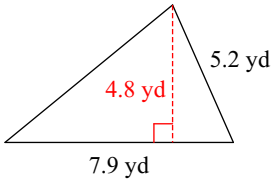
374)



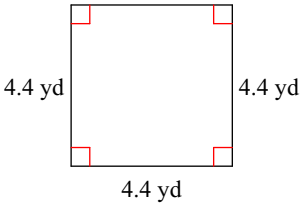
375)



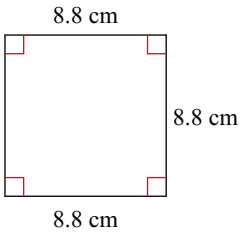
376)



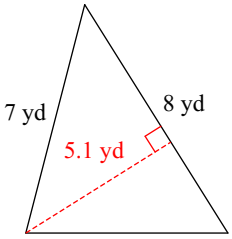
377)



378)

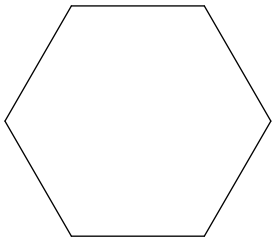


379)

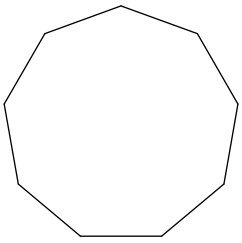


Write the name of each polygon.

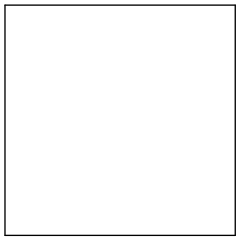
380)



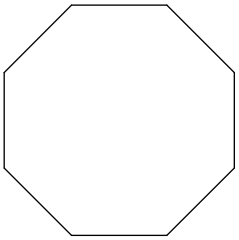
381)



382)

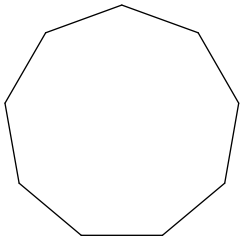


383)

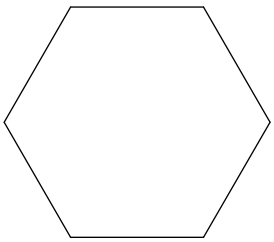


Find the measure of one interior angle in each regular polygon. Round your answer to the nearest tenth if necessary.

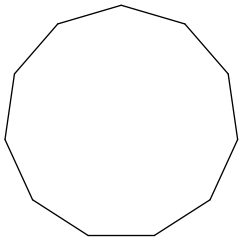
384)



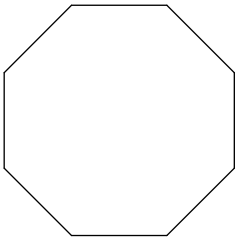
385)



386)

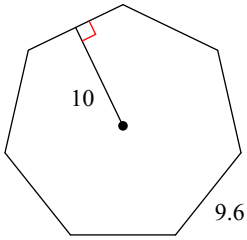


387)

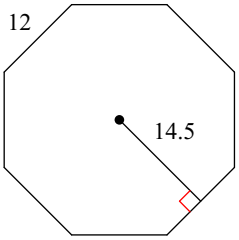


Find the area of each regular polygon. Round your answer to the nearest tenth if necessary.

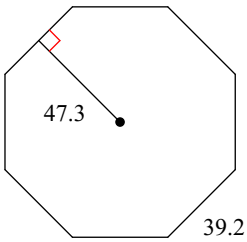
388)



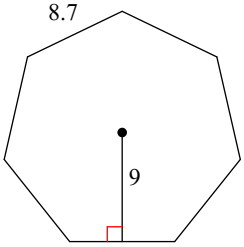
389)



390)



391)



392) triangle
apothem = 19.6
side = 67.9

393) pentagon
apothem = 9.7
side = 14.1

394) octagon
apothem = 14
side = 11.6

395) pentagon
apothem = 10
side = 14.5

Solve each proportion.

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

397) $\frac{7}{2} = \frac{3}{x}$

398) $\frac{6}{3} = \frac{3}{x}$

399) $\frac{7}{8} = \frac{r}{7}$

400) $-\frac{4}{11} = \frac{a+8}{3}$

401) $\frac{n-12}{4} = \frac{10}{3}$

402) $-\frac{2}{11} = \frac{10}{x-4}$

403) $\frac{11}{12} = \frac{9}{x-3}$

404) $-\frac{2}{k-9} = -\frac{3}{k}$

405) $\frac{x-6}{12} = -\frac{x}{9}$

406) $\frac{n-11}{4} = -\frac{n}{6}$

407) $\frac{x}{9} = \frac{x+6}{11}$

408) $\frac{9}{10} = \frac{n+5}{n+8}$

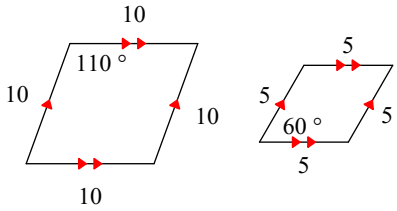
409) $\frac{r+8}{5} = \frac{r+11}{3}$

410) $\frac{9}{r-3} = -\frac{8}{r-2}$

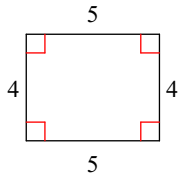
411) $\frac{11}{v+10} = -\frac{2}{v+5}$

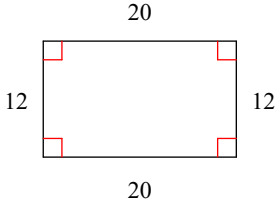
State if the polygons are similar.

412)

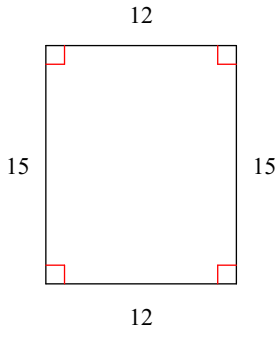


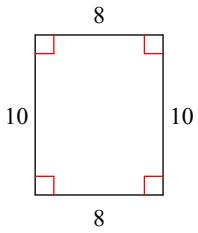
413)



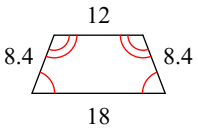


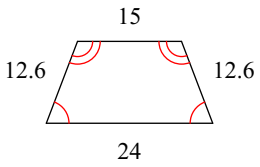
414)





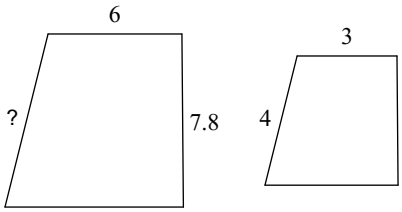
415)



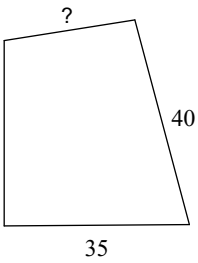


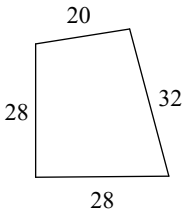
The polygons in each pair are similar. Find the missing side length.

416)

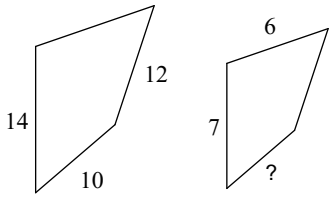


417)

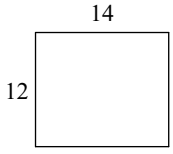


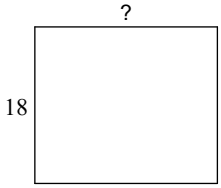


418)



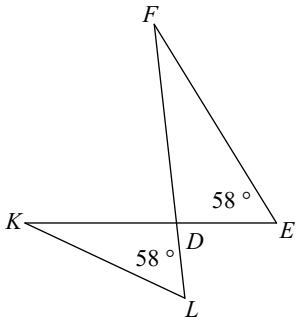
419)



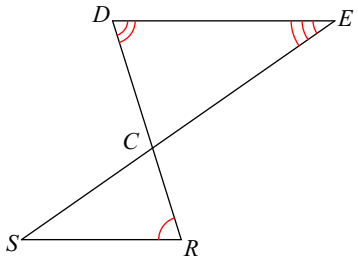


State if the triangles in each pair are similar.

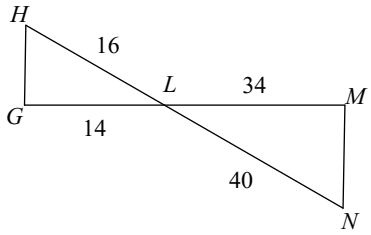
420) $\triangle DEF \sim \triangle DLK$



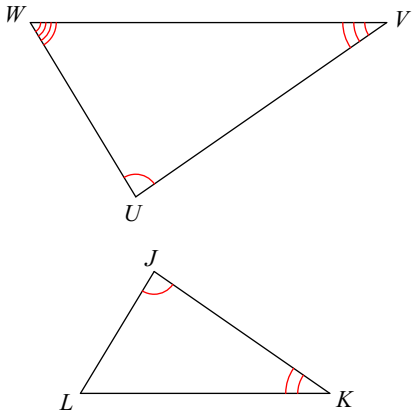
421) $\triangle CDE \sim \triangle CRS$



422) $\triangle LMN \sim \triangle LGH$

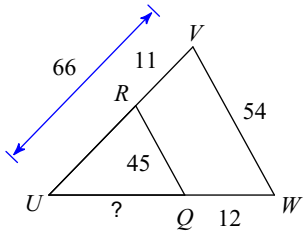


423) $\triangle UVW \sim \triangle JKL$

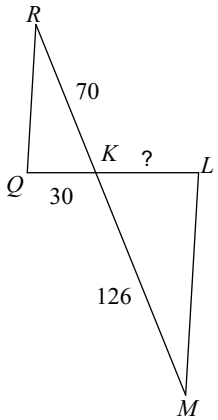


Find the missing length. The triangles in each pair are similar.

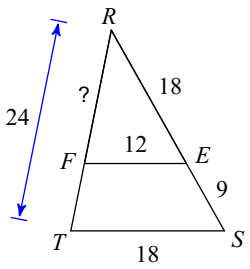
424)



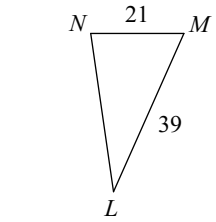
425) $\triangle KLM \sim \triangle KQR$

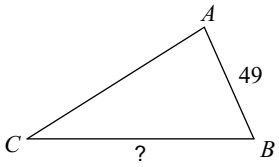


426)



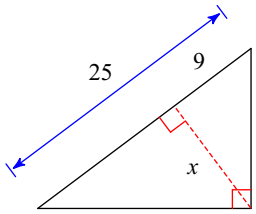
427) $\triangle ABC \sim \triangle NML$



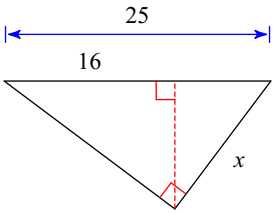


Find the missing length indicated. Leave your answer in simplest radical form.

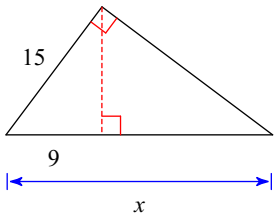
428)



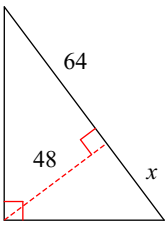
429)



430)

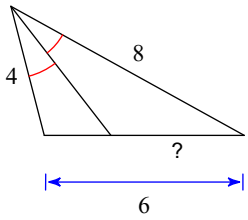


431)

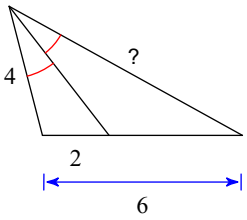


Find the missing length indicated.

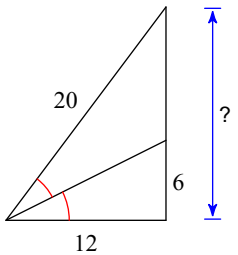
432)



433)



434)



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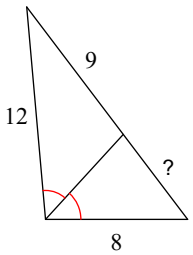
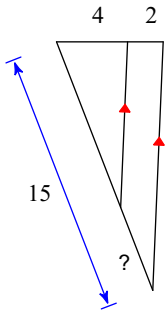
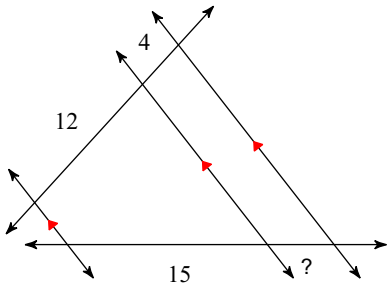


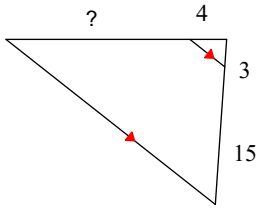
436)



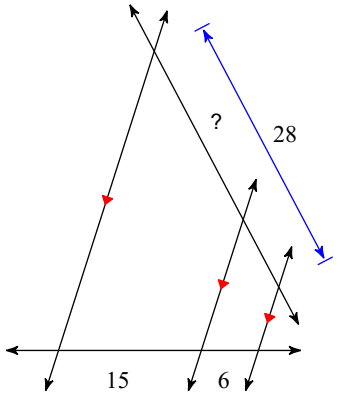
437)



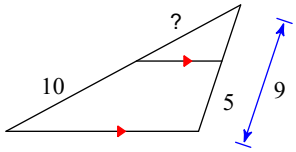
438)



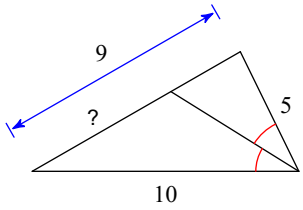
439)



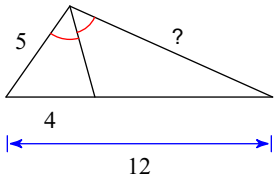
440)



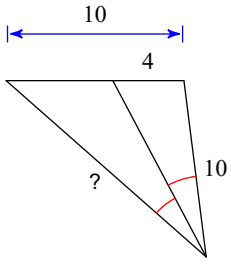
441)



442)

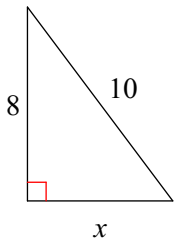


443)

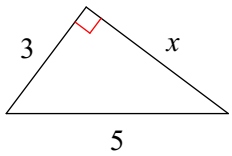


Find the missing side of each triangle. Round your answers to the nearest tenth if necessary.

444)

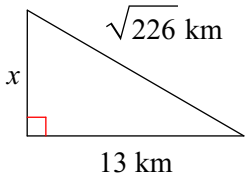


445)

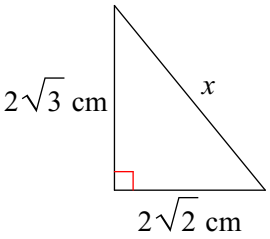


Find the missing side of each triangle. Leave your answers in simplest radical form.

446)



447)



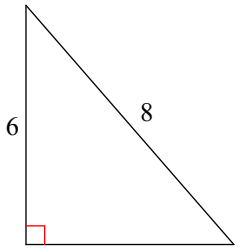
State if the three side lengths form an acute, obtuse, or right triangle.

448) 29 km, 80 km, $\sqrt{7241}$ km

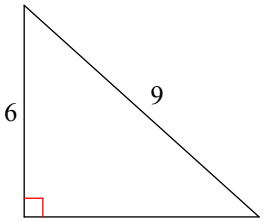
449) 14 cm, 97 cm, $\sqrt{9605}$ cm

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.

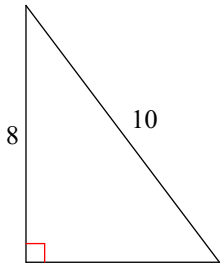
450)



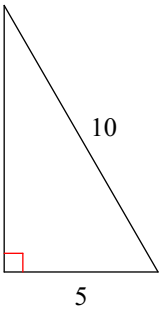
451)



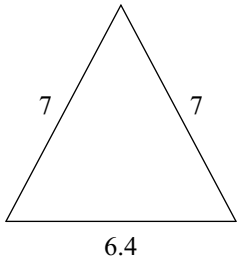
452)



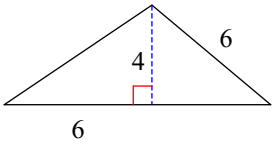
453)



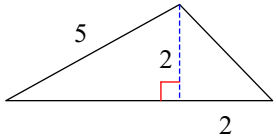
454)



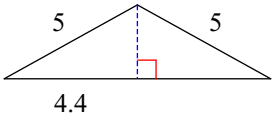
455)



456)

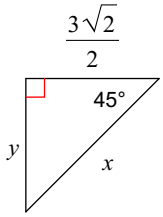


457)

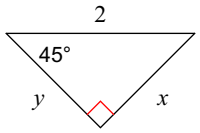


Find the missing side lengths. Leave your answers as radicals in simplest form.

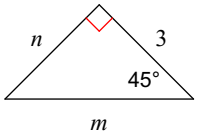
458)



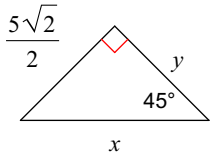
459)



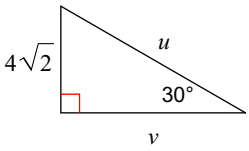
460)



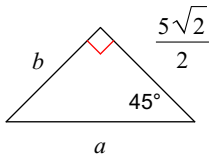
461)



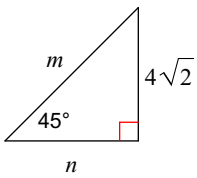
462)



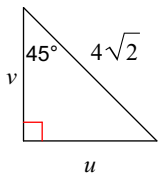
463)



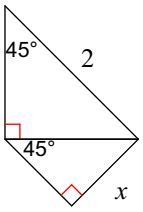
464)



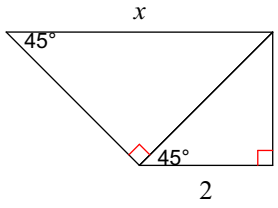
465)



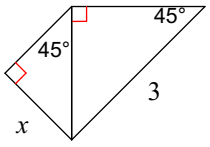
466)



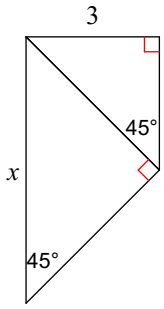
467)



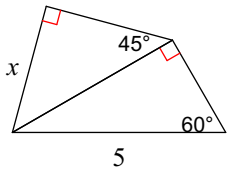
468)



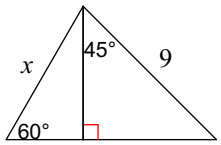
469)



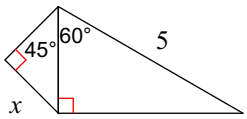
470)



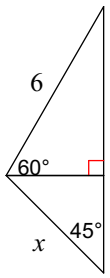
471)



472)



473)



Find the value of each trigonometric ratio to the nearest ten-thousandth.

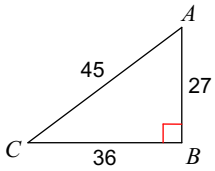
474) tan 6°

475) sin 80°

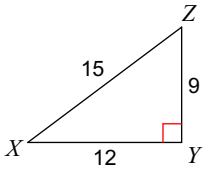
476) cos 39°

477) tan 64°

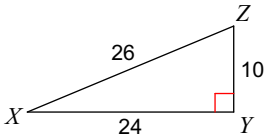
478) tan *C*



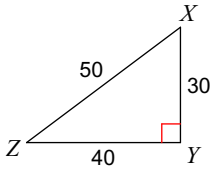
479) tan *X*



480) cos *X*



481) tan *Z*



Find each angle measure to the nearest degree.

482) cos V = 0.9816

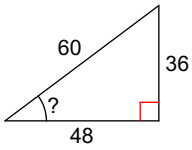
483) tan B = 1.7321

484) cos U = 0.2588

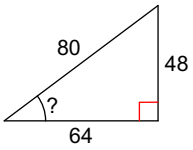
485) sin X = 0.9986

Find the measure of the indicated angle to the nearest degree.

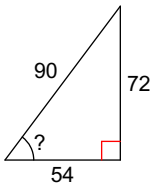
486)



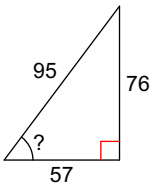
487)



488)

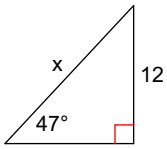


489)

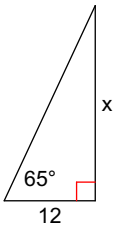


Find the missing side. Round to the nearest tenth.

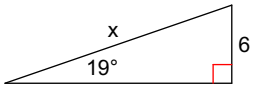
490)



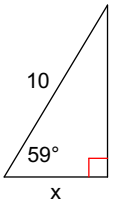
491)



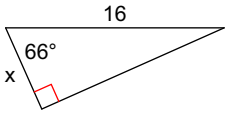
492)



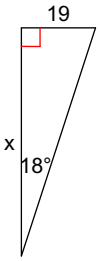
493)



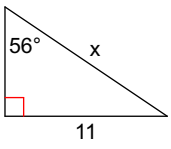
494)



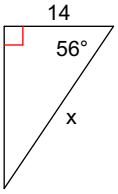
495)



496)

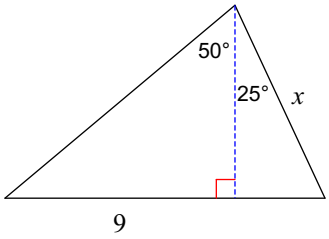


497)

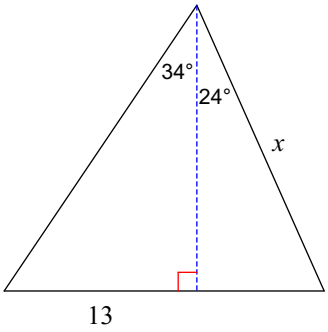


Find the length of the side labeled *x*. Round intermediate values to the nearest tenth. Use the rounded values to calculate the next value. Round your final answer to the nearest tenth.

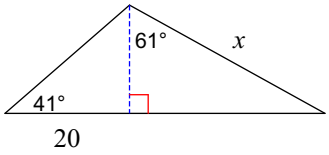
498)



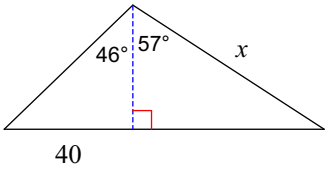
499)



500)

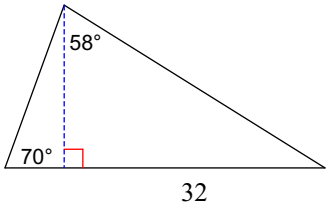


501)

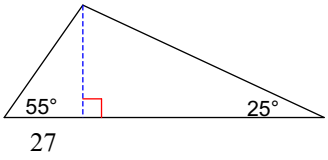


Find the area of each triangle. Round intermediate values to the nearest tenth. Use the rounded values to calculate the next value. Round your final answer to the nearest tenth.

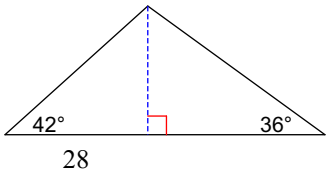
502)



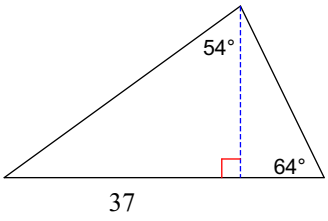
503)



504)

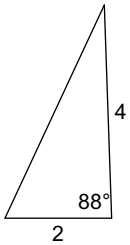


505)

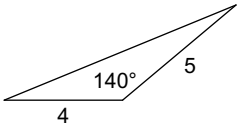


Find the area of each figure. Round your answer to the nearest tenth.

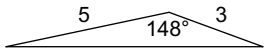
506)



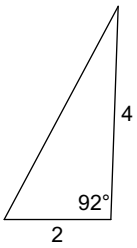
507)



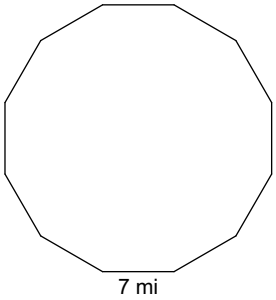
508)



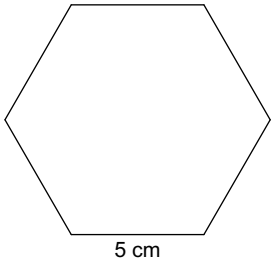
509)



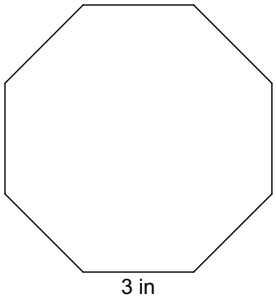
510)



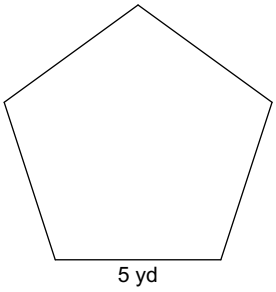
511)



512)

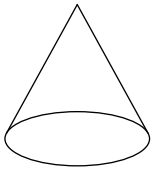


513)

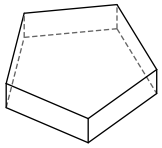


Name each figure.

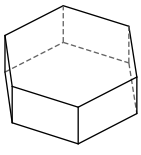
514)



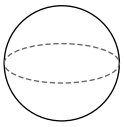
515)



516)

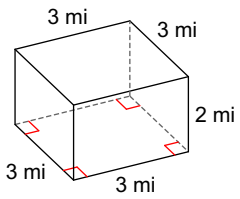


517)

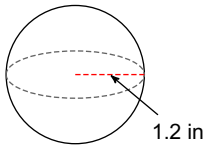


Find the volume of each figure. Round your answers to the nearest hundredth, if necessary.

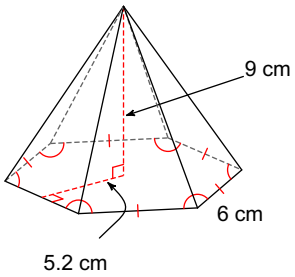
518)



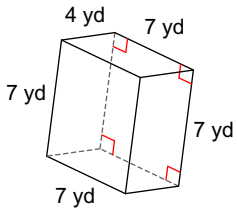
519)



520)

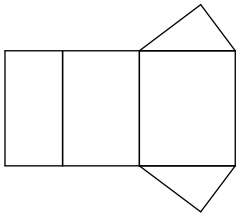


521)

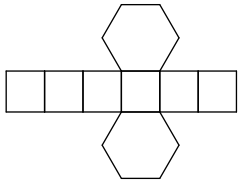


Identify each solid given its net.

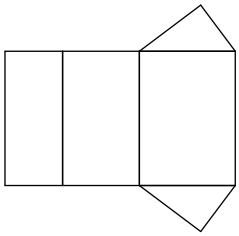
522)



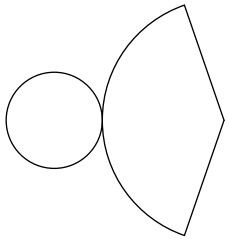
523)



524)

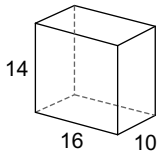


525)

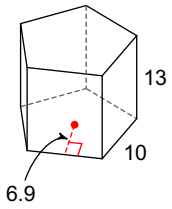


Sketch the net of each solid. Label the measurements given.

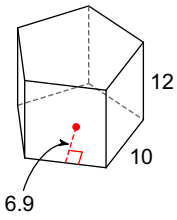
526)



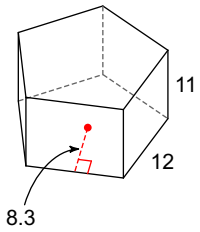
527)



528)

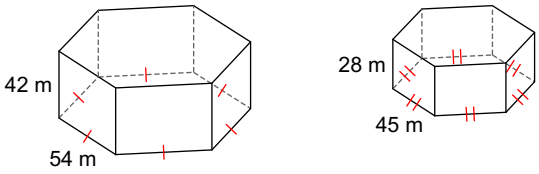


529)

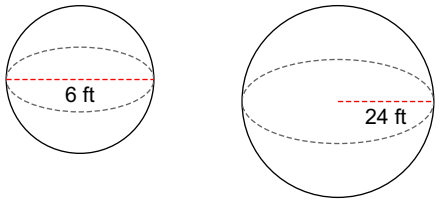


Determine if each pair of solids is similar.

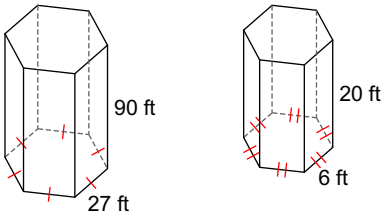
530)



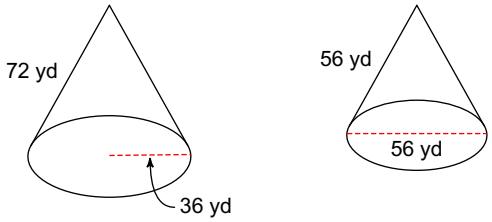
531)



532)



533)



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.

534) scale factor = 4 : 5
SA = 288 mi²
V = 576 mi³

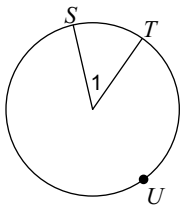
535) scale factor = 4 : 5
SA = 48 km²
V = 1920 km³

536) scale factor = 7 : 9
SA = 637 m²
V = 8918 m³

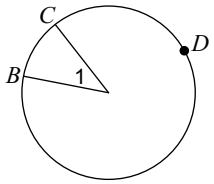
537) scale factor = 4 : 7
SA = 272 yd²
V = 704 yd³

Name the arc made by the given angle.

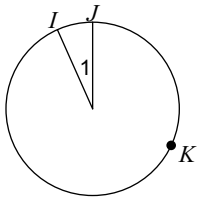
538) $\angle 1$



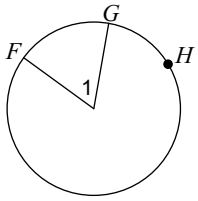
539) $\angle 1$



540) $\angle 1$

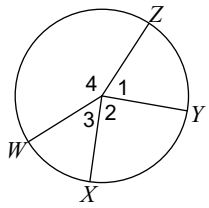


541) $\angle 1$

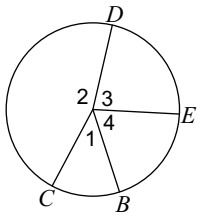


If an angle is given, name the arc it makes. If an arc is given, name its central angle.

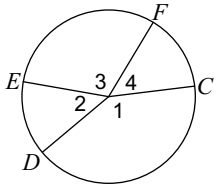
542) $\angle 1$



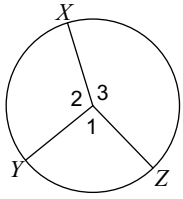
543) $\overset{\frown}{BCE}$



544) Major arc for $\angle 1$

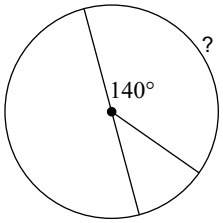


545) $\overset{\frown}{YZX}$

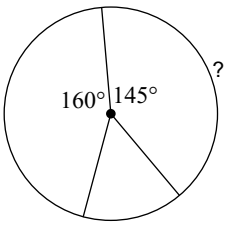


Find the measure of the arc or central angle indicated. Assume that lines which appear to be diameters are actual diameters.

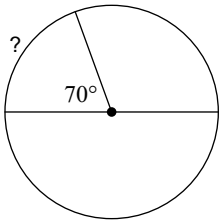
546)



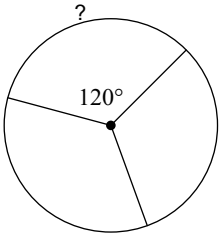
547)



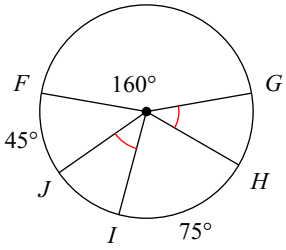
548)



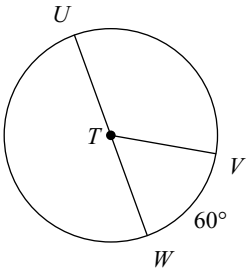
549)



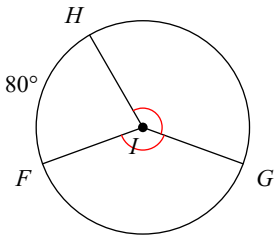
550) $m\widehat{GJ}$



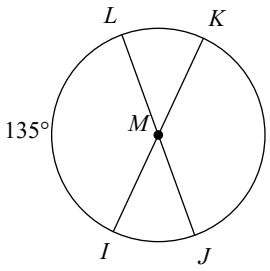
551) $m\angle UTV$



552) $m\angle GIF$

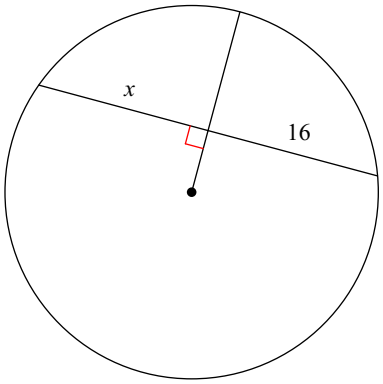


553) $m\angle JMI$

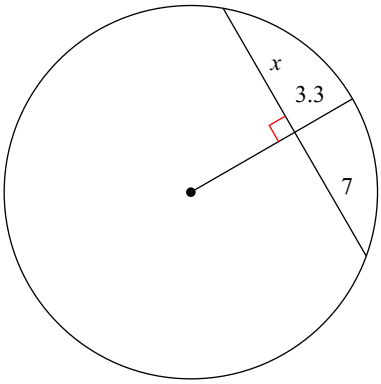


Find the length of the segment indicated. Round your answer to the nearest tenth if necessary.

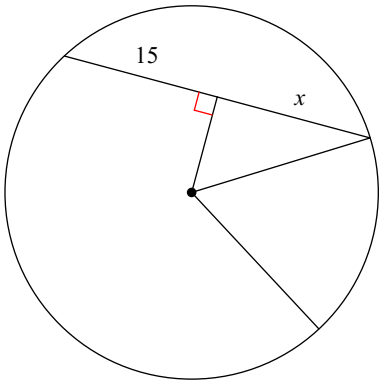
554)



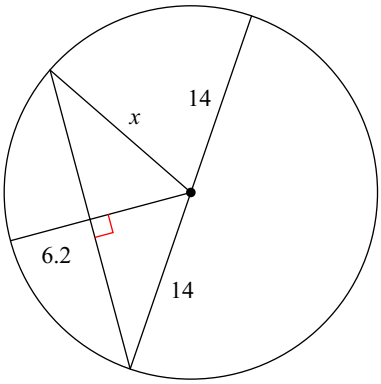
555)



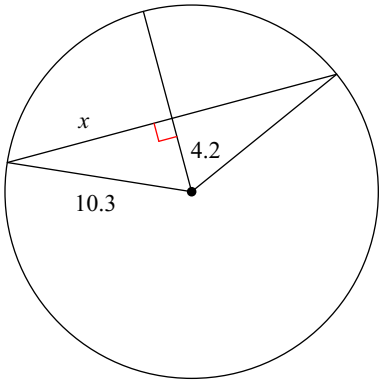
556)



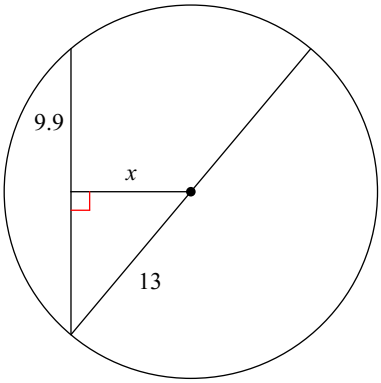
557)



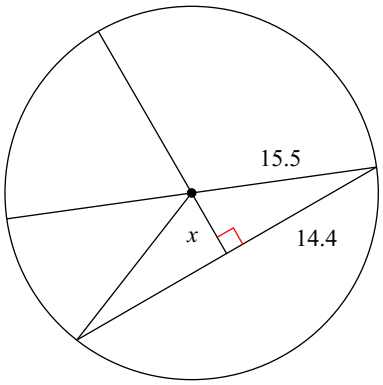
558)



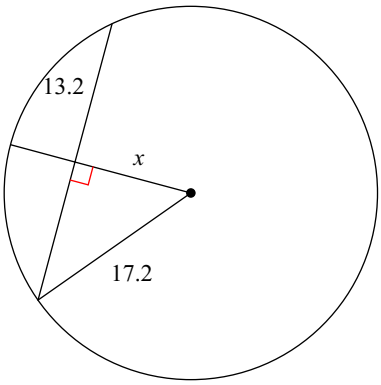
559)



560)

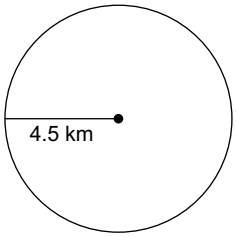


561)

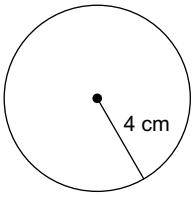


Find the circumference of each circle. Use your calculator's value of π. Round your answer to the nearest tenth.

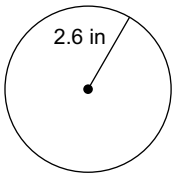
562)



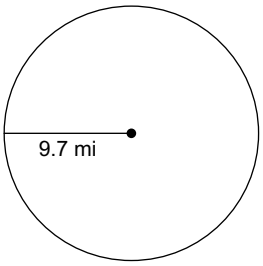
563)



564)

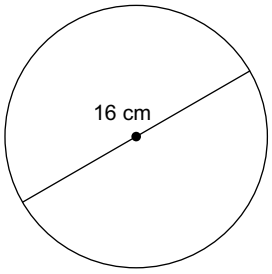


565)

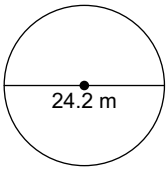


Find the area of each. Use your calculator's value of π. Round your answer to the nearest tenth.

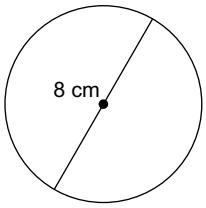
566)



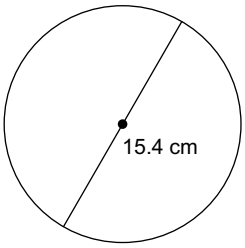
567)



568)

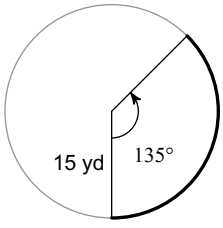


569)

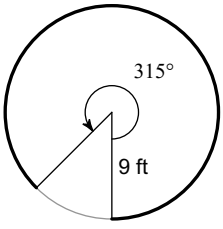


Find the length of each arc. Round your answers to the nearest tenth.

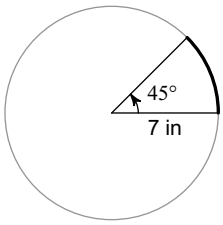
570)



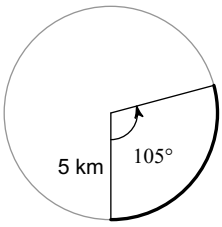
571)



572)

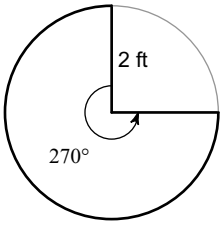


573)

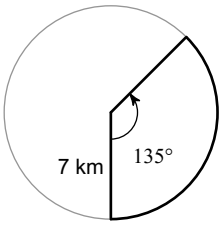


Find the area of each sector.

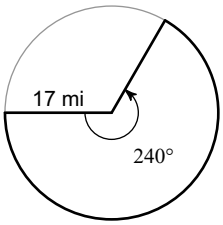
574)



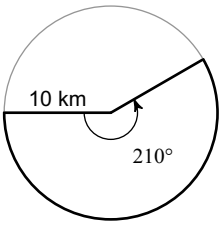
575)



576)

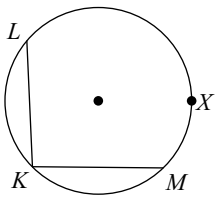


577)

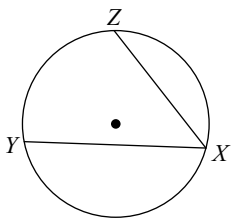


State if each angle is an inscribed angle. If it is, name the angle and the intercepted arc.

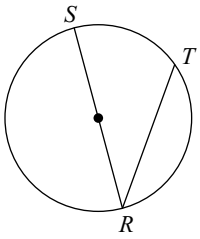
578)



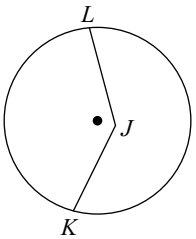
579)



580)

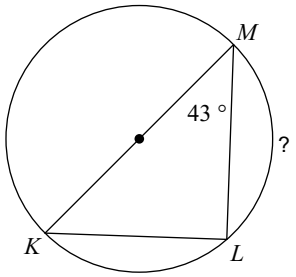


581)

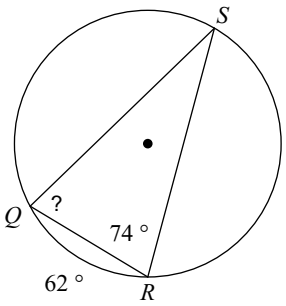


Find the measure of the arc or angle indicated.

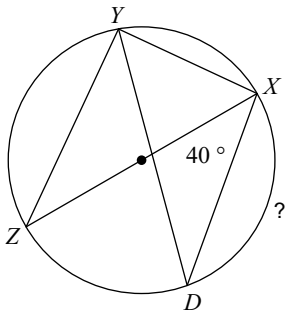
582)



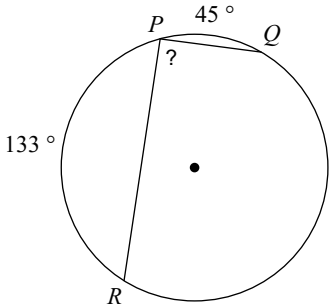
583)



584)

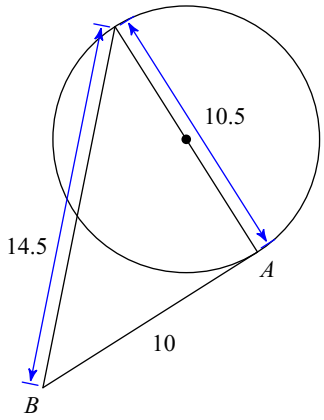


585)

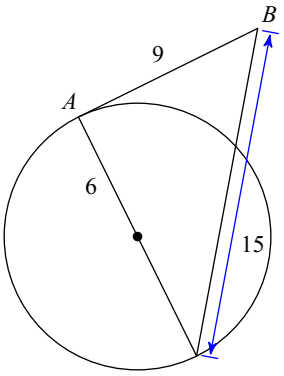


Determine if line AB is tangent to the circle.

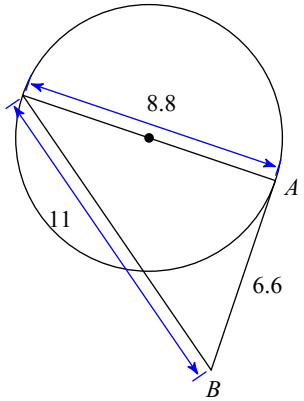
586)



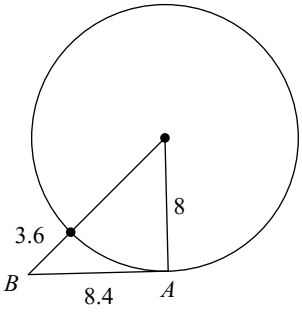
587)



588)

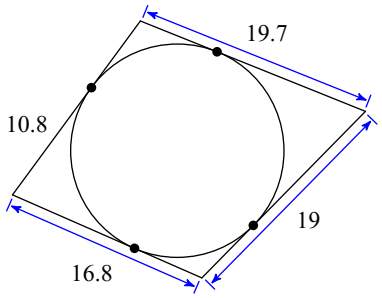


589)

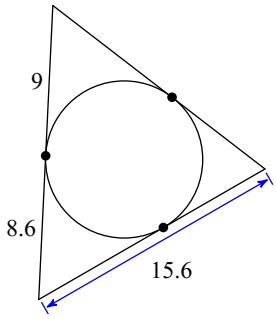


Find the perimeter of each polygon. Assume that lines which appear to be tangent are tangent.

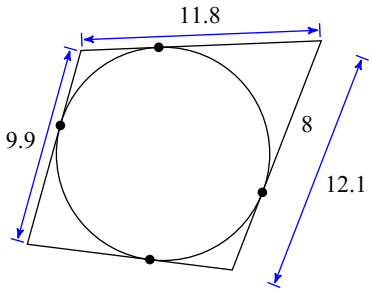
590)



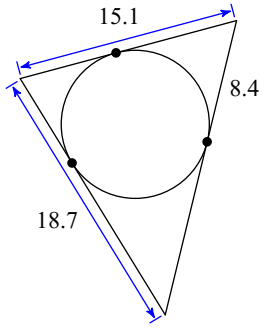
591)



592)

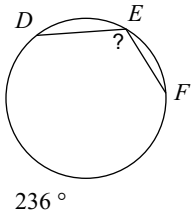


593)

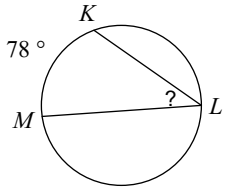


Find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.

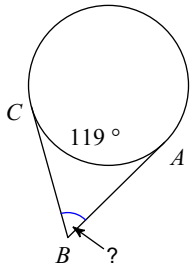
594)



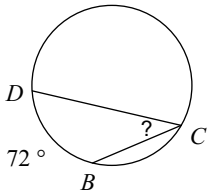
595)



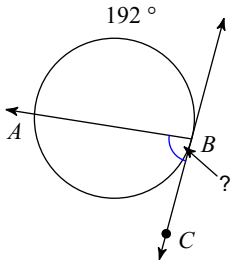
596)



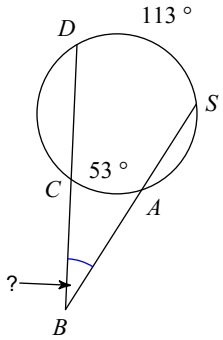
597)



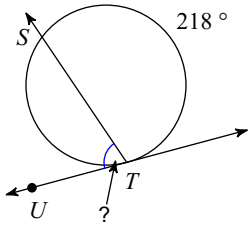
598)



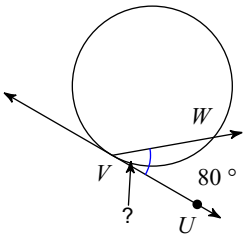
599)



600)

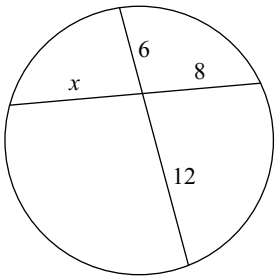


601)

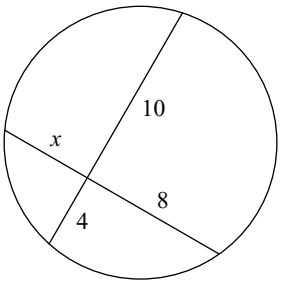


Solve for *x*. Assume that lines which appear tangent are tangent.

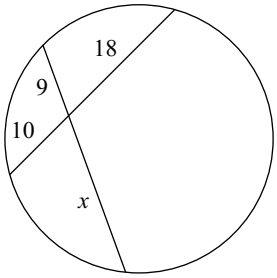
602)



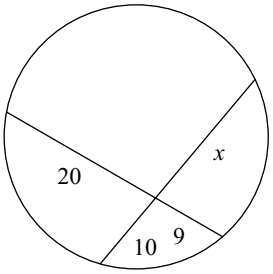
603)



604)

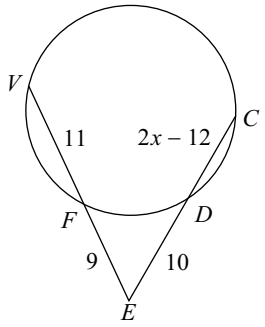


605)

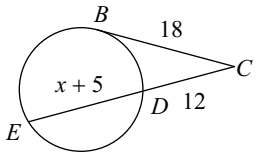


Find the measure of the line segment indicated. Assume that lines which appear tangent are tangent.

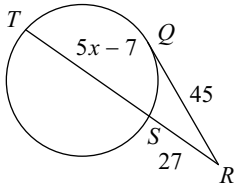
606) Find *CE*



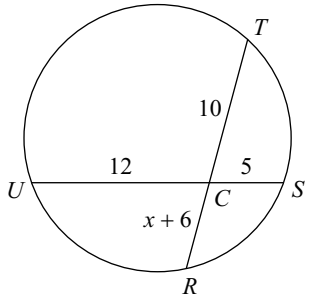
607) Find *DE*



608) Find *ST*

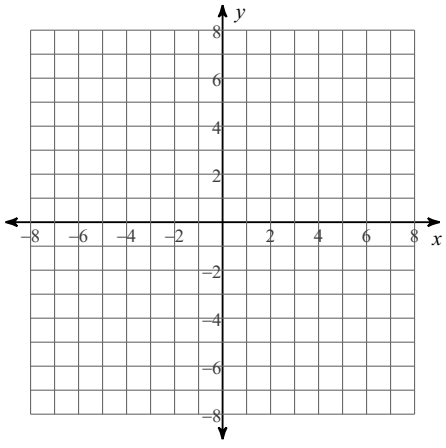


609) Find *TR*

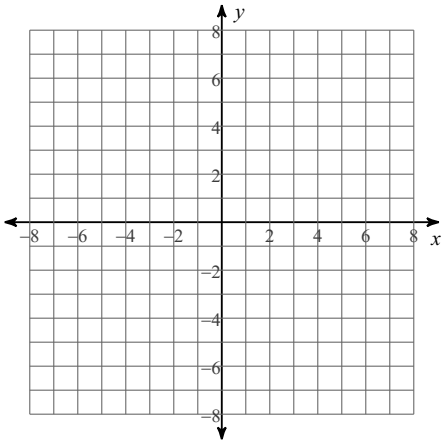


Graph each equation.

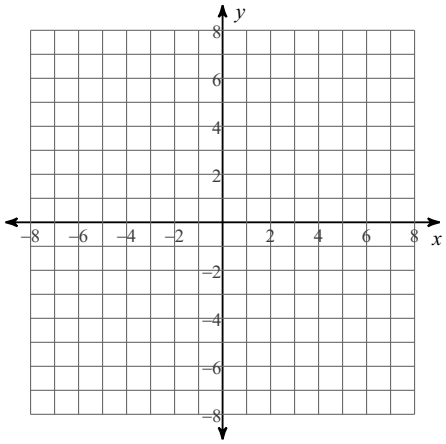
610) $x^2 + y^2 = 36$



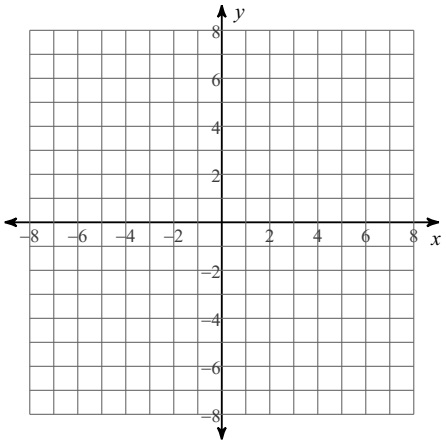
611) $x^2 + y^2 = 25$



612) $x^2 + y^2 = 1$

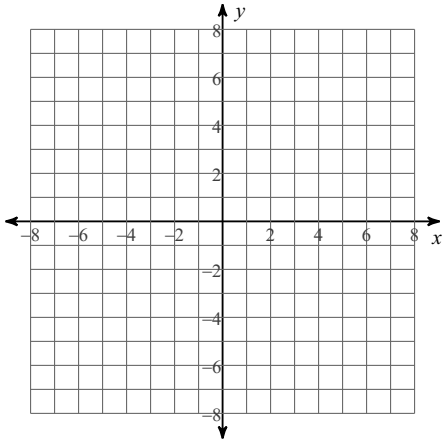


613) $x^2 + y^2 = 4$

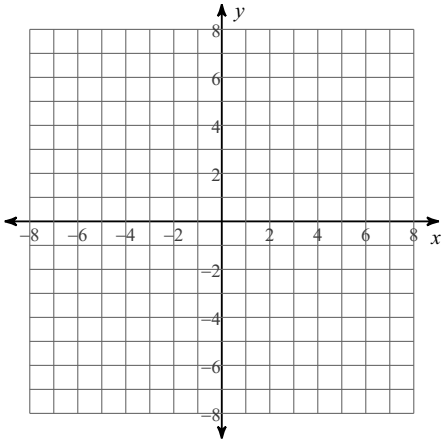


Identify the center and radius of each. Then sketch the graph.

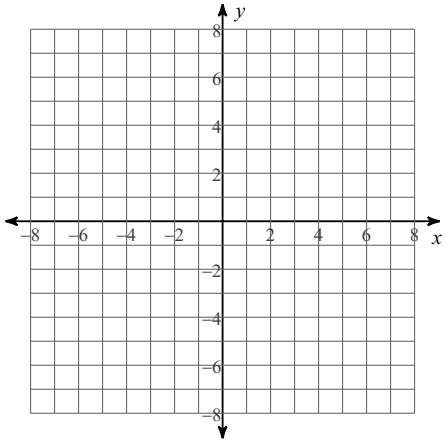
614) $(x+1)^2 + (y-2)^2 = 9$



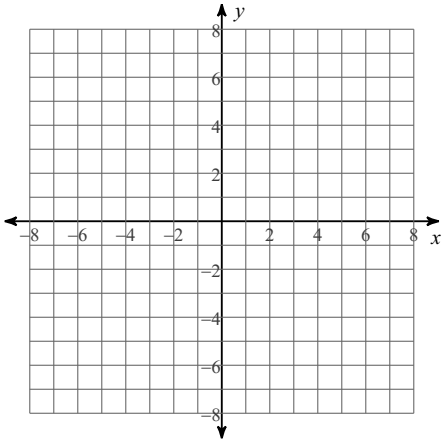
615) $(x+4)^2 + (y+1)^2 = 9$



616) $(x+2)^2 + (y+2)^2 = 9$



617) $(x+3)^2 + (y-2)^2 = 5$



Use the information provided to write the equation of each circle.

618) Center: $(-4, 14)$
Radius: 4

619) Center: $(14, -6)$
Radius: 5

620) Center: $(14, 12)$
Radius: 2

621) Center: $(-15, 7)$
Radius: 2

622) Center: $(-10, -10)$
Circumference: 14π

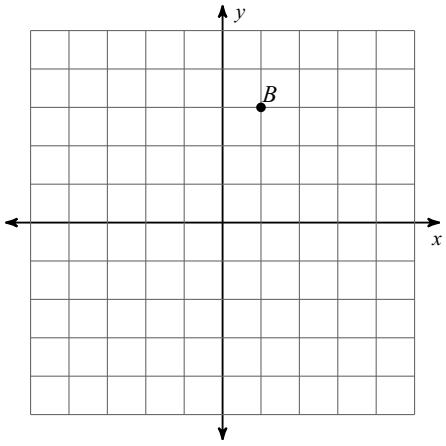
623) Center: $(-3, -16)$
Circumference: 4π

624) Center: $(-14, -11)$
Circumference: 4π

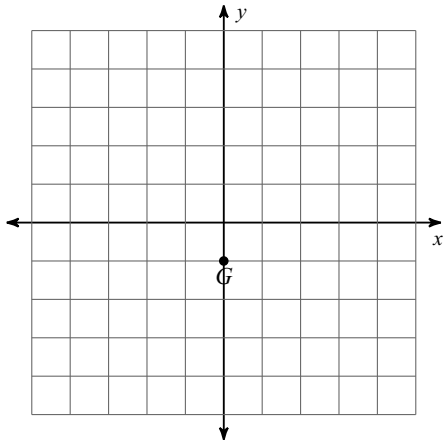
625) Center: $(-4, -5)$
Circumference: 18π

Graph the image of the figure using the transformation given.

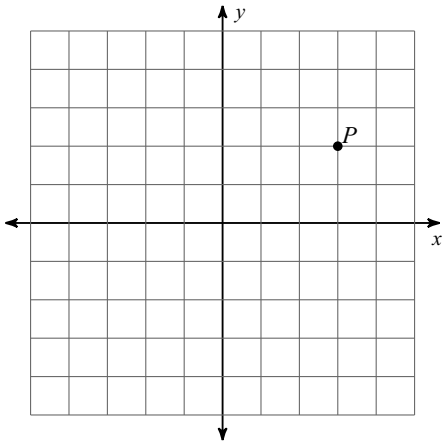
626) translation: 5 units left and 2 units down



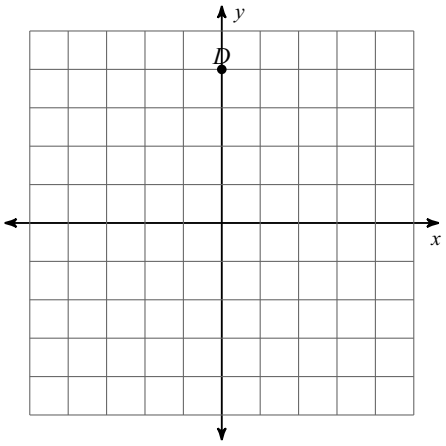
627) translation: 5 units right



628) reflection across the x-axis

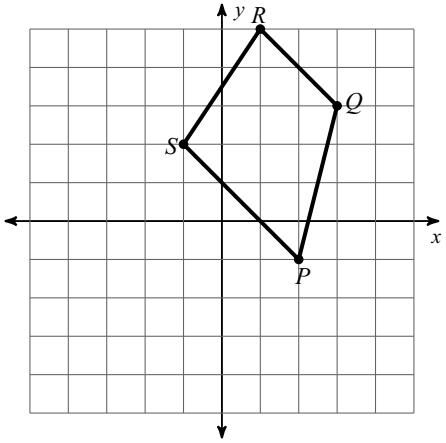


629) translation: 3 units right and 9 units down

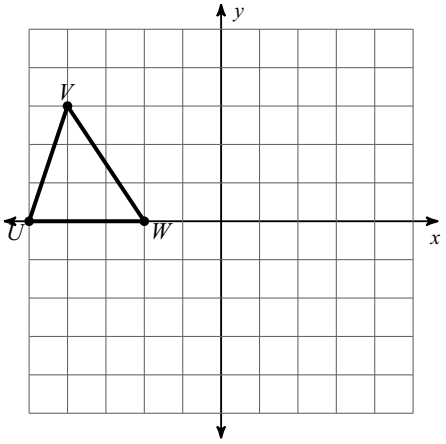


Find the coordinates of the vertices of each figure after the given transformation.

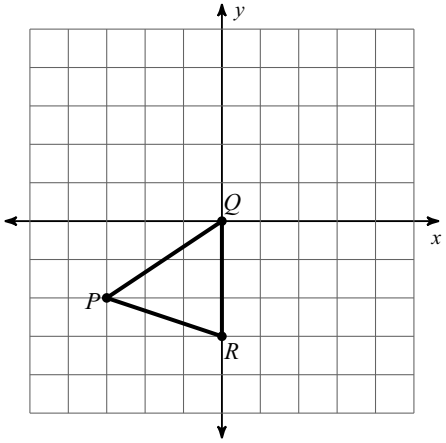
630) reflection across the y-axis



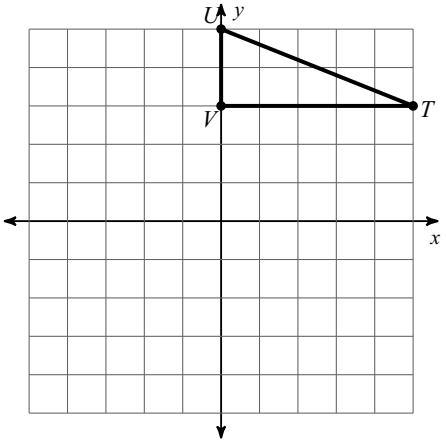
631) reflection across $x = -2$



632) translation: 3 units right and 4 units up



633) reflection across the y-axis



Represent the sample space using set notation.

634) The chess club must decide when to meet for a practice. The possible days are Tuesday, Wednesday, or Thursday.

635) When a button is pressed, a computer program outputs a random even number greater than 0 and less than 10. You press the button once.

636) The chess club must decide when to meet for a practice. The possible days are Tuesday or Wednesday.

637) The band must decide when to meet for a practice. The possible times are 3, 4, or 5 p.m.

638) The band must decide when to meet for a practice. The possible days are Tuesday, Wednesday, or Thursday. The possible times are 3 or 4 p.m.

639) A spinner can land on either red, blue, or green. You flip a coin and then spin the spinner.

640) A spinner can land on either red or blue. You flip a coin and then spin the spinner.

641) A spinner can land on either red or blue. You spin twice.

Determine whether the scenario involves independent or dependent events.

642) A bag contains five red marbles and three blue marbles. You randomly pick a marble and then return it to the bag before picking another marble. The first marble is red and the second marble is blue.

643) A bag contains three red marbles and eight blue marbles. You randomly pick a marble and then return it to the bag before picking another marble. Both the first and second marbles are red.

644) A box of chocolates contains six milk chocolates and six dark chocolates. You randomly pick a chocolate and eat it. Then you randomly pick another piece. Both pieces are milk chocolate.

645) Your sock drawer has six white socks, four brown socks, and two black socks. You randomly pick a sock and put it on your left foot and then pick another sock and put it on your right foot. You leave the house with a white sock on your left foot and a brown sock on your right foot.

Determine whether the scenario involves independent or dependent events. Then find the probability.

646) Your sock drawer has two white socks, four brown socks, and six black socks. You randomly pick a sock and put it on your left foot and then pick another sock and put it on your right foot. You leave the house with a white sock on your left foot and a brown sock on your right foot.

647) A bag contains seven red marbles and three blue marbles. Another bag contains four green marbles and seven yellow marbles. You randomly pick one marble from each bag. One marble is blue and one marble is yellow.

648) There are eight nickels and five dimes in your pocket. You randomly pick a coin out of your pocket and place it on a counter. Then you randomly pick another coin. Both coins are nickels.

649) A cooler contains twelve bottles of sports drink: five lemon-lime flavored and seven orange flavored. You randomly grab a bottle and give it to your friend. Then, you randomly grab a bottle for yourself. You and your friend both get lemon-lime.

Determine if events *A* and *B* are independent.

650) $P(A) = \frac{2}{5}$ $P(B) = \frac{2}{5}$ $P(A \text{ and } B) = \frac{4}{25}$

651) $P(A) = \frac{7}{20}$ $P(B) = \frac{3}{10}$ $P(A \text{ and } B) = \frac{63}{400}$

652) $P(A) = \frac{3}{4}$ $P(B) = \frac{11}{20}$ $P(A \text{ and } B) = \frac{33}{80}$

653) $P(A) = \frac{3}{10}$ $P(B) = \frac{9}{20}$ $P(A \text{ and } B) = \frac{9}{50}$

Events *A* and *B* are independent. Find the missing probability.

654) $P(A) = \frac{9}{20}$ $P(A \text{ and } B) = \frac{117}{400}$ $P(B) = ?$

655) $P(A) = \frac{3}{5}$ $P(B) = \frac{3}{10}$ $P(A \text{ and } B) = ?$

656) $P(B) = \frac{1}{4}$ $P(A \text{ and } B) = \frac{11}{80}$ $P(A) = ?$

657) $P(A) = \frac{2}{5}$ $P(B) = \frac{1}{4}$ $P(A \text{ and } B) = ?$

Determine if the scenario involves mutually exclusive events.

658) There are five nickels and six dimes in your pocket. Four of the nickels and two of the dimes are Canadian. The others are US currency. You randomly select a coin from your pocket. It is a dime or is US currency.

659) A box of chocolates contains five milk chocolates, three dark chocolates, and four white chocolates. You randomly select a chocolate. It is a milk chocolate or a dark chocolate.

660) You roll a fair six-sided die. The die shows a three or a six

661) A magazine contains thirteen pages. You open to a random page. The page number is nine or twelve.

Find the probability.

662) A bag contains three yellow tickets numbered one to three. The bag also contains four green tickets numbered one to four. You randomly pick a ticket. It is green or has an odd number.

663) A bag contains three yellow tickets numbered one to three. The bag also contains three green tickets numbered one to three. You randomly pick a ticket. It is yellow or has an even number.

664) A cooler contains fourteen bottles of sports drink: five lemon-lime flavored, five orange flavored, and four fruit-punch flavored. You randomly grab a bottle. It is a lemon-lime or an orange.

665) A litter of kittens consists of two gray kittens, two black kittens, and two mixed-color kittens. You randomly pick one kitten. The kitten is gray or mixed-color.

Determine if events *A* and *B* are mutually exclusive.

666) $P(A) = \frac{1}{4}$ $P(B) = \frac{3}{10}$ $P(A \text{ or } B) = \frac{19}{40}$

667) $P(A) = \frac{1}{2}$ $P(B) = \frac{1}{5}$ $P(A \text{ or } B) = \frac{7}{10}$

668) $P(A) = \frac{3}{10}$ $P(B) = \frac{1}{5}$ $P(A \text{ or } B) = \frac{1}{2}$

669) $P(A) = \frac{1}{5}$ $P(B) = \frac{1}{4}$ $P(A \text{ or } B) = \frac{37}{100}$

Events *A* and *B* are mutually exclusive. Find the missing probability.

670) $P(A) = \frac{2}{5}$ $P(A \text{ or } B) = \frac{13}{20}$ $P(B) = ?$

671) $P(A) = \frac{1}{5}$ $P(A \text{ or } B) = \frac{1}{2}$ $P(B) = ?$

672) $P(A) = \frac{13}{20}$ $P(B) = \frac{1}{4}$ $P(A \text{ or } B) = ?$

673) $P(A) = \frac{1}{4}$ $P(B) = \frac{13}{20}$ $P(A \text{ or } B) = ?$

List all possible permutations.

674) 1, 2, 3

675) ☺, ☼, ♥

676) A, B

677) ☺, ☼

Evaluate each expression.

678) ${}_6P_6$

679) $5 \cdot {}_6P_5$

680) $\frac{{}_9P_5}{5}$

681) $\frac{{}_{10}P_3}{9}$

List all possible combinations.

682) 4, 5, 6, 7, taken two at a time

683) A, B, C, D, taken two at a time

684) ☺, ☼, ♥, ▲, taken two at a time

Evaluate each expression.

685) ${}_{24}C_4$

686) ${}_{24}C_{19}$

687) ${}_{19}C_{14}$

688) ${}_{25}C_4$

State if each scenario involves a permutation or a combination.

689) Mofor has homework in five subjects. He is deciding what order to complete them in.

690) A team of 12 softball players needs to choose three players to refill the water cooler.

691) The student body of 50 students wants to elect a president, vice president, secretary, and treasurer.

692) A team of 15 field hockey players needs to choose three players to refill the water cooler.

Find the number of possibilities in each scenario.

693) Emily has homework assignments in six subjects. She only has time to do three of them.

694) Alberto and Shreya are planning trips to seven countries this year. There are 9 countries they would like to visit. They are deciding which countries to skip.

695) There are 120 people at a meeting. They each give a Valentine's Day card to everyone else. How many cards were given?

696) Selecting which nine players will be in the batting order on a 10 person team.

Find the probability of each event.

697) A gardener has eight identical-looking tulip bulbs, of which each will produce a different color tulip. Five of the colors are unknown, however one will become white, one will become yellow, and one will become pink. He plants them abitrarily in a row. When the flowers start to bloom, what is the probability that the yellow one is first in the row, the white one is second, and the pink one is at the end of the row?

698) A bag contains five real diamonds and five fake diamonds. If five diamonds are picked from the bag at random, what is the probability that all of them are real?

699) A child is drawing a rainbow using a box of eleven different colored crayons, which include the seven required colors. After drawing the red, orange, yellow, and green arcs in the proper order, he forgets the last three colors. From the remaining seven crayons, he chooses three at random to finish drawing the rainbow. What is the probability that he correctly finishes the ROYGBIV rainbow?

700) A politician is about to give a campaign speech and is holding a stack of eleven cue cards, of which the first 3 are the most important. Just before the speech, she drops all of the cards and picks them up in a random order. What is the probability that cards #1, #2, and #3 are still in order on the top of the stack?

701) A test consists of nine true/false questions. A student who forgot to study guesses randomly on every question. What is the probability that the student answers exactly four questions correctly?

702) One day, six babies are born at a hospital. Assuming each baby has an equal chance of being a boy or girl, what is the probability that exactly three of the six babies are girls?

703) A six-sided die is rolled twelve times. What is the probability that the die will show an even number exactly five times?

704) A fair coin is flipped eight times. What is the probability of the coin landing tails up exactly five times?

Answers

1) $\{-3\}$
2) $\{1\}$
3) $\{-1\}$
4) $\{-2\}$
5) $\{4\}$
6) $\{-2\}$
7) $\{-2\}$
8) $\{6\}$
9) $\{3\}$
10) $\{4\}$
11) $\{0\}$
12) $\{-4\}$
13) $\{7\}$
14) $\{3\}$
15) $\{-12\}$
16) 14
17) $18\sqrt{2}$
18) $5\sqrt{3}$
19) $9\sqrt{10}$
20) $8\sqrt{2}$
21) $12\sqrt{2}$
22) $3\sqrt{7}$
23) $6\sqrt{3}$
24) $9\sqrt{5}$
25) $4\sqrt{5}$
26) $4\sqrt{6}$
27) $\sqrt{3}$
28) $10\sqrt{2}$
29) $4\sqrt{5}$
30) 0
31) $5\sqrt{6} - 6\sqrt{3}$
32) $-\sqrt{5} - 5\sqrt{2}$
33) $12\sqrt{2}$
34) $-4\sqrt{3} - 3\sqrt{2}$
35) $-3\sqrt{6} + 5\sqrt{2}$
36) $5\sqrt{3}$
37) 3
38) 15
39) $\sqrt{6}$
40) $6\sqrt{5}$
41) $-8\sqrt{5} + 5\sqrt{10}$
42) $-20\sqrt{3} - 5\sqrt{30}$
43) $-60 + 10\sqrt{10}$
44) $6\sqrt{5} - 5\sqrt{2}$
45) $-5\sqrt{10} + 2\sqrt{5}$
46) $90\sqrt{5} + 15\sqrt{30}$
47) $42\sqrt{70} + 294\sqrt{3}$
48) $-30\sqrt{10} + 105\sqrt{5}$
49) $-98\sqrt{21} - 84\sqrt{2}$
50) $12\sqrt{21} + 9\sqrt{14}$
51) $\frac{5\sqrt{15}}{12}$
52) $\frac{4\sqrt{15}}{25}$
53) $\frac{3\sqrt{15}}{2}$
54) $\frac{\sqrt{3}}{5}$
55) $\frac{\sqrt{2}}{6}$
56) $\frac{\sqrt{6}}{6}$
57) $\frac{\sqrt{3}}{3}$
58) $\frac{\sqrt{21}}{14}$
59) $\frac{2\sqrt{21}}{3}$
60) $\frac{\sqrt{15}}{20}$
61) $\frac{-2\sqrt{11} - 5\sqrt{22}}{11}$
62) $\frac{4\sqrt{3} + 3}{24}$
63) $\frac{3\sqrt{11} - \sqrt{55}}{55}$
64) $\frac{5\sqrt{6} - 3\sqrt{3}}{12}$
65) $\frac{-\sqrt{5} + 5}{20}$
66) 2 cm
67) 6 cm
68) 6 cm
69) 1 cm
70) 26 mm, 0.5 mm, 1.9%
71) 41 mm, 0.5 mm, 1.2%
72) 36 mm, 0.5 mm, 1.4%
73) 32 mm, 0.5 mm, 1.6%
74) 6
75) 4
76) 4
77) 7
78) 12
79) 25
80) 22
81) 20
82) 0
83) −3
84) −8
85) 5
86) 140
87) 35
88) 62
89) 103
90) obtuse
91) acute
92) obtuse
93) acute
94) obtuse
95) K, $\overrightarrow{KL}$ and $\overrightarrow{KJ}$
96) C, $\overrightarrow{CB}$ and $\overrightarrow{CD}$
97) B, $\overrightarrow{BA}$ and $\overrightarrow{BC}$
98) H, $\overrightarrow{HG}$ and $\overrightarrow{HI}$
99) I, $\overrightarrow{IH}$ and $\overrightarrow{IJ}$
100) $\angle C$, $\angle 3$, $\angle BCD$, $\angle DCB$
101) $\angle I$, $\angle 2$, $\angle HIJ$, $\angle JIH$
102) $\angle J$, $\angle 2$, $\angle IJK$, $\angle KJI$
103) $\angle I$, $\angle 2$, $\angle HIJ$, $\angle JIH$
104) $\angle C$, $\angle 5$, $\angle BCD$, $\angle DCB$
105) 178°
106) 52°
107) 155°
108) 150°
109) 120°
110) adjacent
111) alternate exterior
112) linear pair
113) vertical
114) alternate exterior
115) corresponding
116) linear pair
117) vertical
118) vertical
119) corresponding
120) 49
121) 40
122) 20
123) 69
124) 18
125) 25
126) 20
127) 15
128) 12
129) 13
130) Given by the diagram
131) Given by the diagram
132) Not given by the diagram
133) Not given by the diagram
134) $\overline{BC} \perp \overrightarrow{BD}$
$\overline{BD} \cong \overline{BC}$
$\angle BDC \cong \angle BCD$
135) $\overline{FE} \perp \overline{GD}$
$\angle CDF \cong \angle HGF$
$\overline{CD} \cong \overline{HG}$
136) $\angle FED \cong \angle ABD$
$\overline{ED} \cong \overline{DB}$
$\overline{FE} \cong \overline{AB}$
137) $\overline{UV} \perp \overline{VY}$
$\overline{WY} \cong \overline{VW}$
$\overline{ZY} \cong \overline{UV}$

138) $g \parallel h \parallel f$
$f \perp \overline{UV}$
$\overline{UV} \cong \overline{WX}$
$\angle VWX \cong \angle YXW$

139) $f \parallel g \parallel h$
$f \perp \overline{ZY}$
$\overline{XW} \cong \overline{ZY}$
$\angle YXW \cong \angle VWX$

140) $\overleftrightarrow{FE} \parallel \overleftrightarrow{HG}$
$\overleftrightarrow{EG} \parallel \overleftrightarrow{FH}$
$\overline{EG} \perp \overline{HG}$
$\overline{EG} \cong \overline{FH}$

141) $\angle FAE \cong \angle BAC$
$\angle CAD \cong \angle DAE$
$\overline{BM} \cong \overline{FN}$
$\overline{DE} \cong \overline{CD}$

142) corresponding

143) alternate interior

144) consecutive interior

145) corresponding

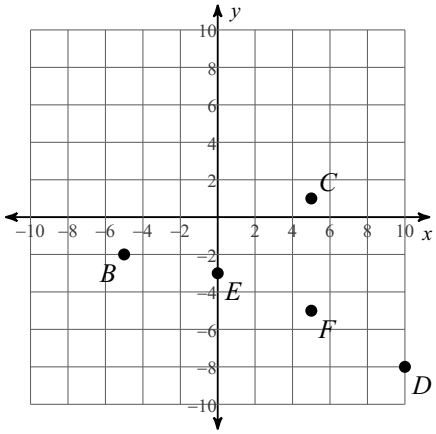
146) 9

147) 9

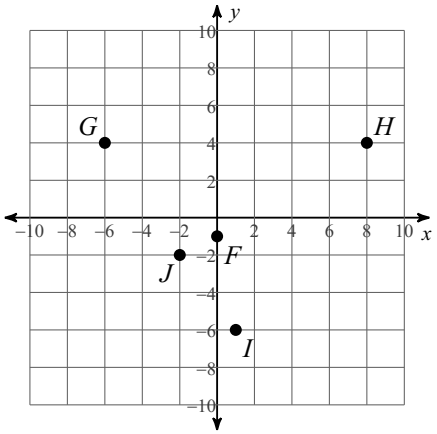
148) 7

149) 7

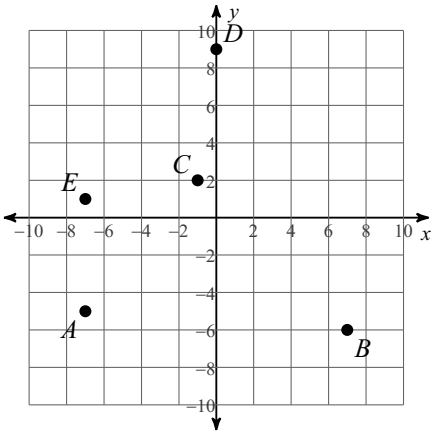
150)



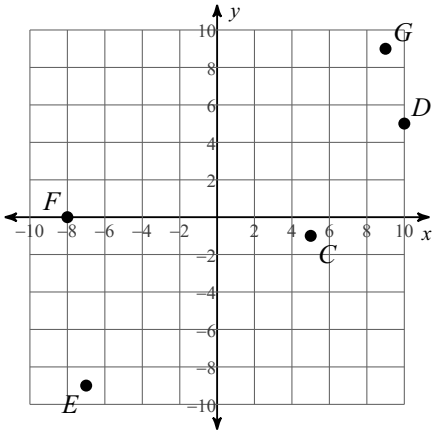
151)



152)



153)



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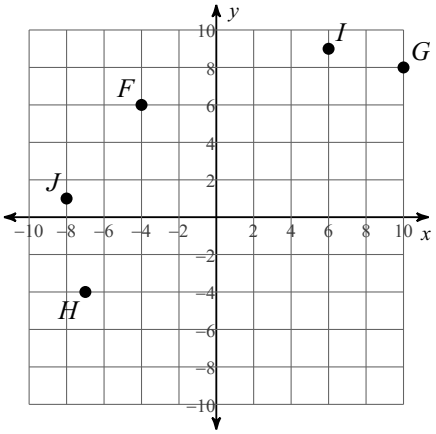
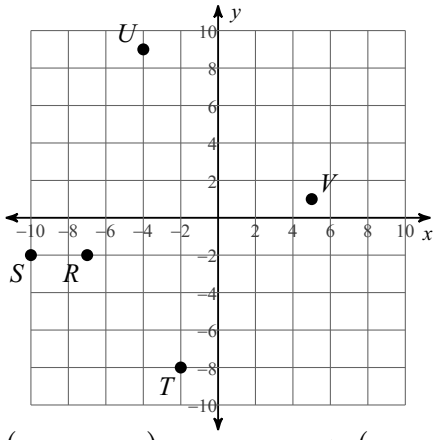


155)



156) $(4, -3)$

157) $(-3, 0.5)$

158) $(-0.5, -1.5)$

159) $(3.5, -1.5)$

160) $(2, 3)$

161) $(-1, -2)$

162) $(1, -2)$

163) $(0.5, 0.5)$

164) $(-1, 18)$

165) $(-4, -9)$

166) $(-10, 0)$

167) $(-6, -13)$

168) 5.1

169) 2.8

170) 4.1

171) 3.2

172) 3.6

173) 8.1

174) 2.8

175) 6.3

176) $\frac{1}{2}$

177) $-\frac{1}{2}$

178) 0

179) $\frac{2}{5}$

180) -1

181) $\frac{3}{2}$

182) 2

183) -1

184) $-\frac{23}{4}$

185) -4

186) 0

187) $\frac{37}{14}$

188) $-\frac{3}{5}$

189) $\frac{1}{5}$

190) Undefined

191) Undefined

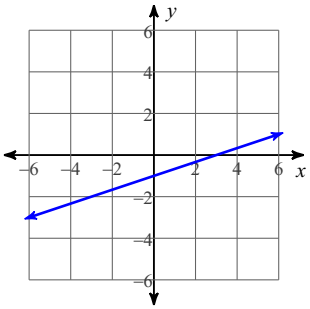
192) 4

193) 2

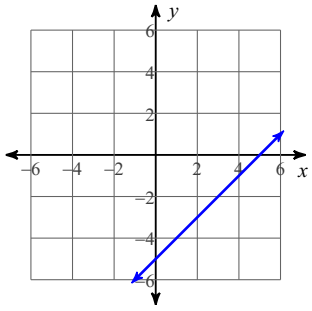
194) $-\frac{5}{3}$

195) $-\frac{3}{4}$

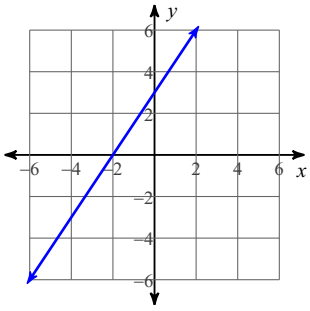
196)



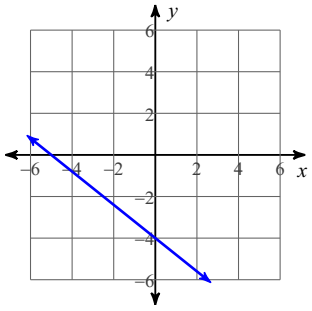
197)

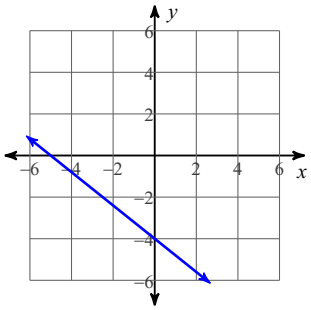


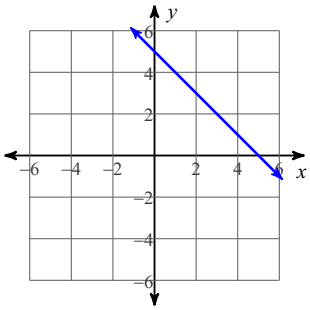
198)

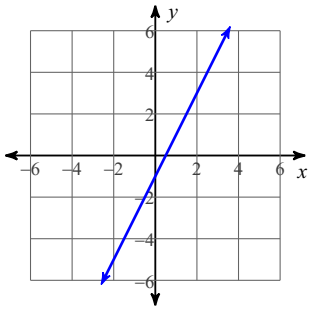


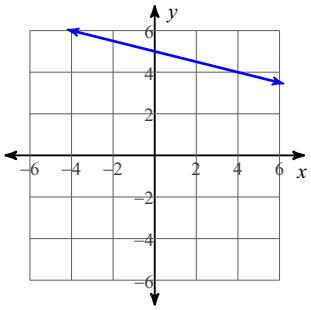
199)

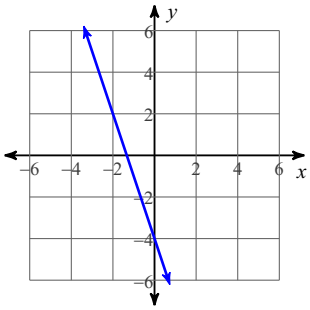


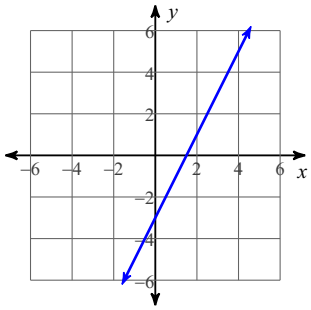
200) 

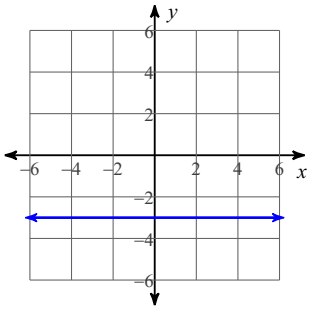
201) 

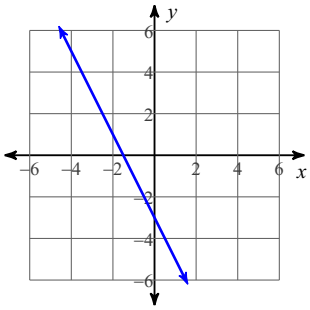
202) 

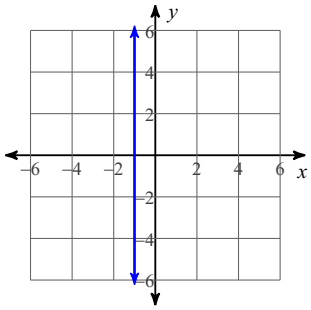
203) 

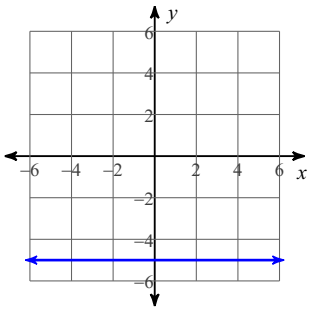
204) 

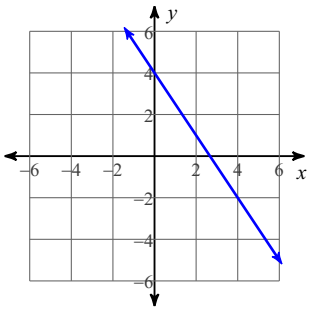
205) 

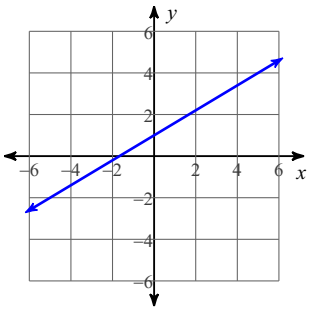
206) 

207) 

208) 

209) 

210) 

211) 

212) $y = -x + 3$

213) $y = -\frac{2}{5}x - 3$

214) $y = x + 3$

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

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

217) $y = -2x + 5$

218) $y = x - 1$

219) $x = 4$

220) $y = 3x + 3$

221) $y = -\frac{9}{5}x + \frac{16}{5}$

222) $y = -\frac{6}{5}x + 2$

223) $y = 3x - 5$

224) $y = -3x + 2$

225) $y = x + 1$

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

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

228) $y = x + 1$

229) $y = \frac{3}{5}x + 5$

230) $0 = x + 4$

231) $y + 5 = \frac{6}{7}(x + 5)$

232) $2x - 5y = 15$

233) $2x + 3y = -5$

234) equiangular

235) right

236) equiangular

237) obtuse

238) acute

239) right scalene

240) obtuse scalene

241) equilateral

242) obtuse isosceles

243) obtuse scalene

244) 99°

245) 40°

246) 67°

247) 40°

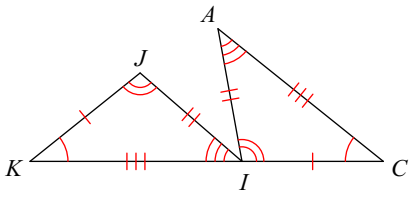
248) 9

249) 8

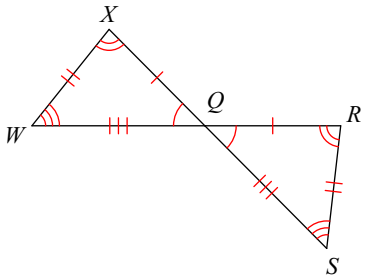
250) −8

251) 10

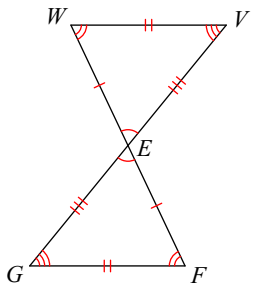
252) 118°
253) 30°
254) 56°
255) 55°
256) 3
257) 6
258) 8
259) 7
260) $\overline{CB}$
261) $\overline{KJ}$
262) $\overline{IH}$
263) $\angle Q$
264)



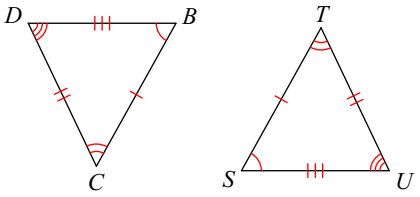
265)



266)

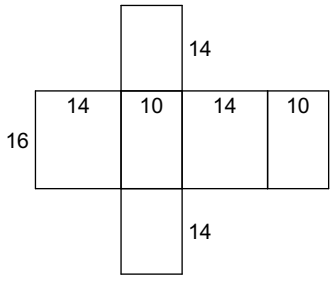


267)

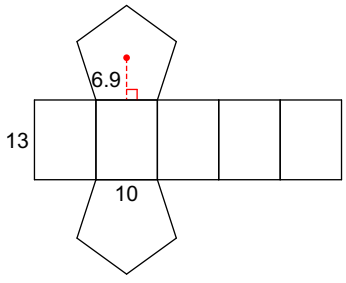


268) Not enough information
269) AAS
270) SSS
271) ASA
272) HL
273) HL
274) LA
275) SSS
276) $\overline{RS} \cong \overline{RE}$
277) $\overline{FE} \cong \overline{RS}$
278) $\angle Z \cong \angle H$
279) $\angle V \cong \angle C$
280) 7
281) 5
282) 4
283) 8
284) 118°
285) 90°
286) 118°
287) 66°
288) 8
289) 9
290) −10
291) −10
292) $\overline{VU}$
293) $\overline{NP}$
294) $\overline{VW}$
295) $\overline{MN}$
296) 11
297) −11
298) −7
299) 8
300) 23°
301) 44°
302) 14°
303) 72°
304) 8
305) 1
306) 4
307) 2
308) 1.2
309) 1
310) 5.7
311) 3
312) 3
313) 2
314) 3
315) 4
316) $(-4, -2)$
317) $(4, -1)$
318) $(-2, 2)$
319) $(2, 1)$
320) $(1, -3)$
321) $\left(\frac{10}{3}, \frac{5}{3}\right)$
322) $\left(-1, -\frac{2}{3}\right)$
323) $(-3, 3)$
324) No
325) No
326) No
327) No
328) $1 < x < 15$
329) $0 < x < 12$
330) $3 < x < 21$
331) $6 < x < 18$
332) $\angle X, \angle W$
333) $\angle R, \angle S$
334) $\angle T, \angle U$
335) $\angle V, \angle U$
336) $\overline{WY}, \overline{WX}, \overline{XY}$
337) $\overline{CE}, \overline{DE}, \overline{CD}$
338) $\overline{FE}, \overline{FD}, \overline{ED}$
339) $\overline{VW}, \overline{VX}, \overline{WX}$
340) trapezoid
341) trapezoid
342) quadrilateral
343) parallelogram
344) rectangle
345) rectangle
346) parallelogram
347) kite
348) 98°
349) 115°
350) 82°
351) 70°
352) 7
353) 3
354) 7
355) 10
356) 65°
357) 106°
358) 40°
359) 148°
360) 0
361) 0
362) 4
363) 7
364) 17
365) 14.2
366) 10.2
367) 22
368) 8
369) 9
370) 4
371) 4
372) 12 ft²
373) 22.62 in²
374) 1.1 ft²
375) 33.55 ft²
376) 18.96 yd²
377) 19.36 yd²
378) 77.44 cm²
379) 20.4 yd²
380) hexagon
381) nonagon
382) quadrilateral
383) octagon
384) 140°
385) 120°
386) 147.3°
387) 135°
388) 336
389) 696
390) 7416.6

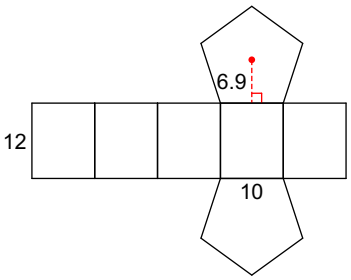
391) 274.1
392) 1996.3
393) 341.9
394) 649.6
395) 362.5
396) $\{1.33\}$
397) $\{0.86\}$
398) $\{1.5\}$
399) $\{6.13\}$
400) $\{-9.09\}$
401) $\{25.33\}$
402) $\{-51\}$
403) $\{12.82\}$
404) $\{27\}$
405) $\{2.57\}$
406) $\{6.6\}$
407) $\{27\}$
408) $\{22\}$
409) $\{-15.5\}$
410) $\{2.47\}$
411) $\{-5.77\}$
412) not similar
413) not similar
414) similar
415) not similar
416) 8
417) 25
418) 5
419) 21
420) similar
421) not similar
422) not similar
423) not similar
424) 60
425) 54
426) 16
427) 91
428) 12
429) 15
430) 25
431) 36
432) 4
433) 8
434) 16
435) 6
436) 5
437) 5
438) 20
439) 20
440) 8
441) 6
442) 10
443) 15
444) 6
445) 4
446) $\sqrt{57}$ km
447) $2\sqrt{5}$ cm
448) Right
449) Right
450) 15.9
451) 20.1
452) 24
453) 21.8
454) 19.8
455) 21
456) 6.6
457) 10.6
458) $x = 3,\ y = \frac{3\sqrt{2}}{2}$
459) $x = \sqrt{2},\ y = \sqrt{2}$
460) $m = 3\sqrt{2},\ n = 3$
461) $x = 5,\ y = \frac{5\sqrt{2}}{2}$
462) $u = 8\sqrt{2},\ v = 4\sqrt{6}$
463) $a = 5,\ b = \frac{5\sqrt{2}}{2}$
464) $m = 8,\ n = 4\sqrt{2}$
465) $u = 4,\ v = 4$
466) 1
467) 4
468) $\frac{3}{2}$
469) 6
470) $\frac{5\sqrt{6}}{4}$
471) $3\sqrt{6}$
472) $\frac{5\sqrt{2}}{4}$
473) $3\sqrt{2}$
474) 0.1051
475) 0.9848
476) 0.7771
477) 2.0503
478) 0.7500
479) 0.7500
480) 0.9231
481) 0.7500
482) 11°
483) 60°
484) 75°
485) 87°
486) 37°
487) 37°
488) 53°
489) 53°
490) 16.4
491) 25.7
492) 18.4
493) 5.2
494) 6.5
495) 58.5
496) 13.3
497) 25.0
498) 8.4
499) 21.1
500) 35.9
501) 70.9
502) 393
503) 2119.1
504) 790
505) 673.8
506) 4
507) 6.4
508) 4
509) 4
510) 548.6 mi²
511) 65 cm²
512) 43.5 in²
513) 43 yd²
514) cone
515) pentagonal prism
516) hexagonal prism
517) sphere
518) 18 mi³
519) 7.24 in³
520) 280.8 cm³
521) 196 yd³
522) triangular prism
523) hexagonal prism
524) triangular prism
525) cone
526)



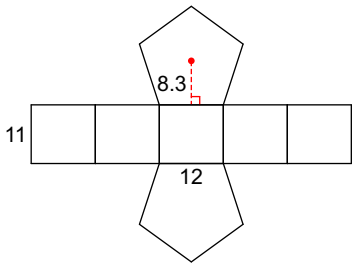
527)



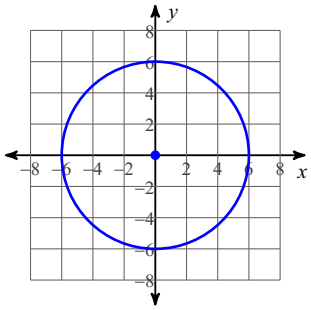
528)



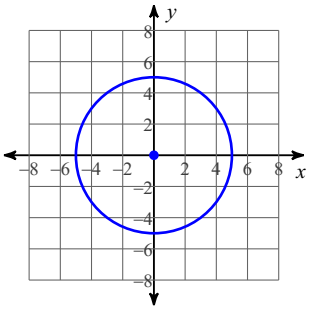
529)



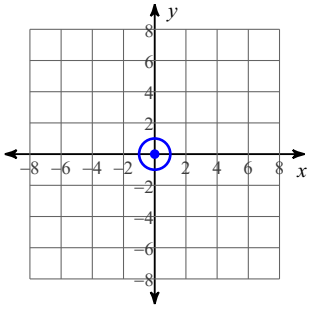
530) No
531) Yes
532) Yes
533) Yes
534) SA = 450 mi², V = 1125 mi³
535) SA = 75 km², V = 3750 km³
536) SA = 1053 m², V = 18954 m³
537) SA = 833 yd², V = 3773 yd³
538) $\overset{\frown}{ST}$
539) $\overset{\frown}{BC}$
540) $\overset{\frown}{IJ}$
541) $\overset{\frown}{FG}$
542) $\overset{\frown}{ZY}$
543) $\angle 4$
544) $\overset{\frown}{CED}$
545) $\angle 2$
546) 140°
547) 145°
548) 70°
549) 120°
550) 155°
551) 120°
552) 140°
553) 45°
554) 16
555) 7
556) 15
557) 14
558) 9.4
559) 8.4
560) 5.7
561) 11
562) 28.3 km
563) 25.1 cm
564) 16.3 in
565) 60.9 mi
566) 201.1 cm²
567) 460 m²
568) 50.3 cm²
569) 186.3 cm²
570) 35.3 yd
571) 49.5 ft
572) 5.5 in
573) 9.2 km
574) 3π ft²
575) $\frac{147\pi}{8}$ km²
576) $\frac{578\pi}{3}$ mi²
577) $\frac{175\pi}{3}$ km²
578) Yes; $m\angle LKM$, $\overset{\frown}{LXM}$
579) Yes; $m\angle YXZ$, $\overset{\frown}{YZ}$
580) Yes; $m\angle SRT$, $\overset{\frown}{ST}$
581) No
582) 94°
583) 75°
584) 100°
585) 91°
586) Tangent
587) Tangent
588) Tangent
589) Tangent
590) 73
591) 49.2
592) 44
593) 54.2
594) 118°
595) 39°
596) 61°
597) 36°
598) 84°
599) 30°
600) 71°
601) 40°
602) 9
603) 5
604) 20
605) 18
606) 18
607) 15
608) 48
609) 16
610)



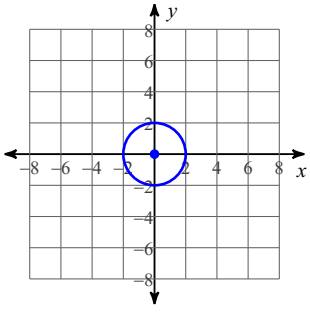
611)



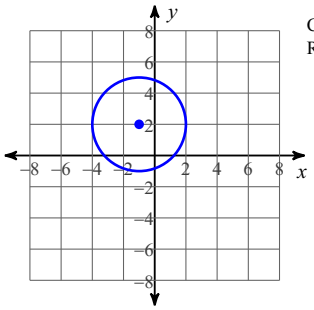
612)



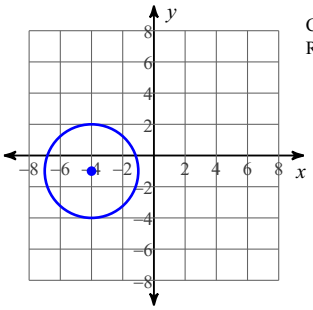
613)



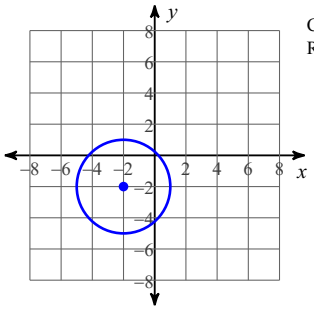
614)



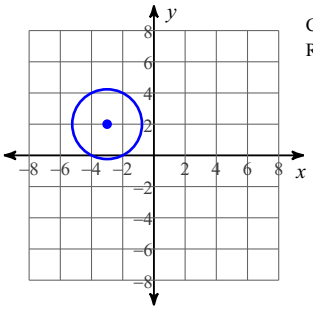
615)



616)



617)



618) $(x+4)^2+(y-14)^2=16$

619) $(x-14)^2+(y+6)^2=25$

620) $(x-14)^2+(y-12)^2=4$

621) $(x+15)^2+(y-7)^2=4$

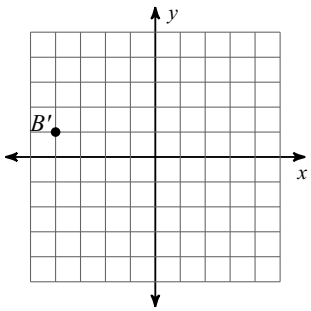
622) $(x+10)^2+(y+10)^2=49$

623) $(x+3)^2+(y+16)^2=4$

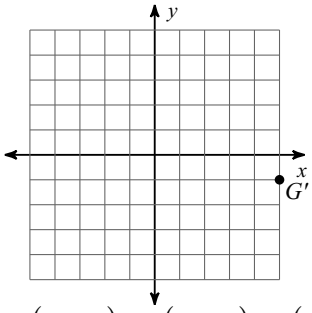
624) $(x+14)^2+(y+11)^2=4$

625) $(x+4)^2+(y+5)^2=81$

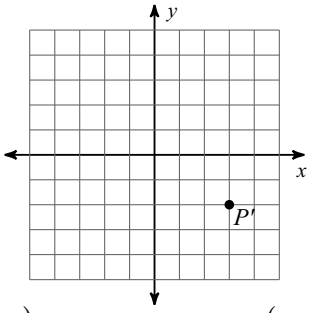
626)



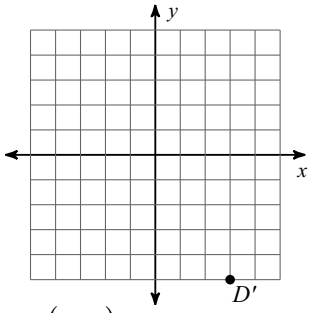
627)



628)



629)



630) $R'(-1, 5)$, $Q'(-3, 3)$, $P'(-2, -1)$, $S'(1, 2)$

631) $V'(0, 3)$, $W'(-2, 0)$, $U'(1, 0)$

632) $P'(0, 2)$, $Q'(3, 4)$, $R'(3, 1)$

633) $U'(0, 5)$, $T'(-5, 3)$, $V'(0, 3)$

634) {Tuesday, Wednesday, Thursday}

635) {2, 4, 6, 8}

636) {Tuesday, Wednesday}

637) {3, 4, 5}

638) {(T, 3), (T, 4), (W, 3), (W, 4), (R, 3), (R, 4)}

639) {(H, R), (H, B), (H, G), (T, R), (T, B), (T, G)}

640) {(H, R), (H, B), (T, R), (T, B)}

641) {(R, R), (R, B), (B, R), (B, B)}

642) Independent

643) Independent

644) Dependent

645) Dependent

646) Dependent; $\frac{2}{33} \approx 0.061$

647) Independent; $\frac{21}{110} \approx 0.191$

648) Dependent; $\frac{14}{39} \approx 0.359$

649) Dependent; $\frac{5}{33} \approx 0.152$

650) Independent

651) Dependent

652) Independent

653) Dependent

654) $\frac{13}{20}$ 655) $\frac{9}{50}$ 656) $\frac{11}{20}$ 657) $\frac{1}{10}$

658) Not mutually exclusive 659) Mutually exclusive 660) Mutually exclusive

661) Mutually exclusive 662) $\frac{6}{7} \approx 0.857$ 663) $\frac{2}{3} \approx 0.667$

664) $\frac{5}{7} \approx 0.714$ 665) $\frac{2}{3} \approx 0.667$ 666) Not mutually exclusive

667) Mutually exclusive 668) Mutually exclusive 669) Not mutually exclusive

670) $\frac{1}{4}$ 671) $\frac{3}{10}$ 672) $\frac{9}{10}$ 673) $\frac{9}{10}$

674) 123 213 312
132 231 321

675) ☺☼♥ ☼☺♥ ♥☺☼
☺♥☼ ☼♥☺ ♥☼☺

676) AB BA

677) ☺☼ ☼☺

678) 720

679) 3,600

680) 3,024

681) 80

682) 45 56
46 57
47 67

683) AB BC
AC BD
AD CD

684) ☺☼ ☼♥
☺♥ ☼▲
☺▲ ♥▲

685) 10,626

686) 42,504

687) 11,628

688) 12,650

689) Permutation

690) Combination

691) Permutation

692) Combination

693) 20

694) 36

695) 14,280

696) 10

697) $\frac{1}{336} \approx 0.298\%$ 698) $\frac{1}{252} \approx 0.397\%$ 699) $\frac{1}{210} \approx 0.476\%$ 700) $\frac{1}{990} \approx 0.101\%$

701) $\frac{63}{256} \approx 24.609\%$ 702) $\frac{5}{16} = 31.25\%$ 703) $\frac{99}{512} \approx 19.336\%$ 704) $\frac{7}{32} = 21.875\%$