Summer Math Packet

Date_____ Period____

Preparing for Algebra 2 Students: Complete Problems #1-100.
Preparing for Algebra 2 Honors Students: Complete the Entire Packet #1-128.

Solve each equation.

1) $-285 = -5(1 + 8v)$

2) $-3(2 + 8b) = -126$

3) $30 + 2x = 4(3 + 5x)$

4) $-29 - 2n = -7(-7 + 4n)$

5) $\frac{2}{3}m + \frac{7}{4}m = \frac{319}{48}$

6) $\frac{7}{4}p - \frac{9}{2} - 2\frac{2}{3} = -\frac{151}{24}$

7) $0.52 = 1.4a + 3.8a$

8) $5.48 = 1.3 - 2.7n + 0.8n$

Simplify.

9) $\sqrt{216}$

10) $\sqrt{390}$

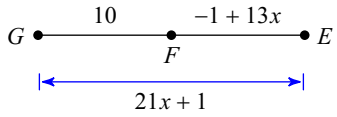
11) $\sqrt{675}$

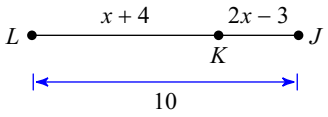
12) $\sqrt{50}$

13) $\sqrt{196}$

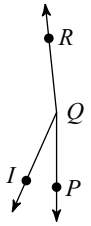
14) $\sqrt{360}$

Solve for *x*.

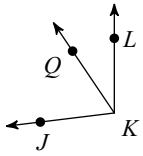
15) 

16) 

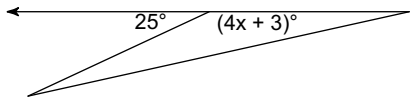
17) Find $m\angle PQR$ if $m\angle PQI = 7x + 3$, $m\angle IQR = 150°$, and $m\angle PQR = 57x + 3$.

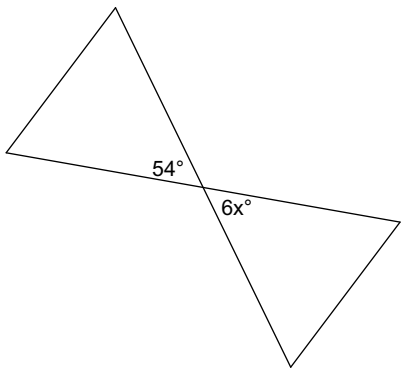


18) $m\angle JKL = 97°$, $m\angle QKL = x + 35$, and $m\angle JKQ = x + 64$. Find $m\angle QKL$.



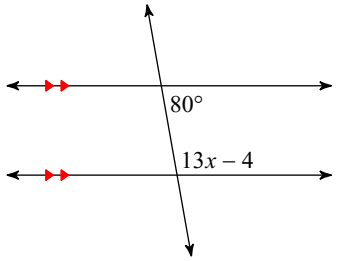
Find the value of x.

19) 

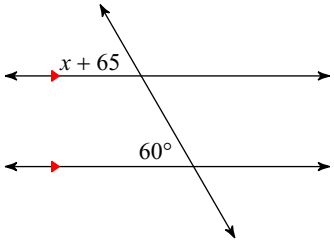
20) 

Solve for *x*.

21)

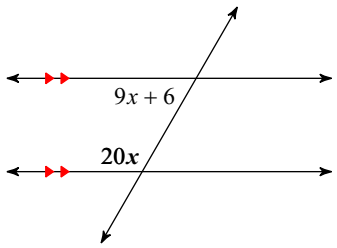


22)



Find the measure of the angle indicated in bold.

23)



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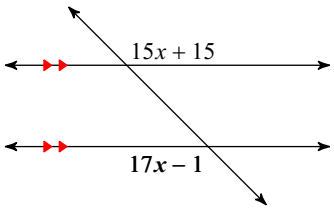
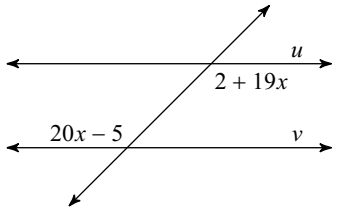


Find the value of *x* that makes lines u and v parallel.

25)



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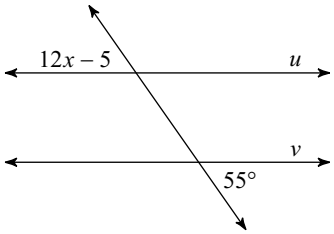
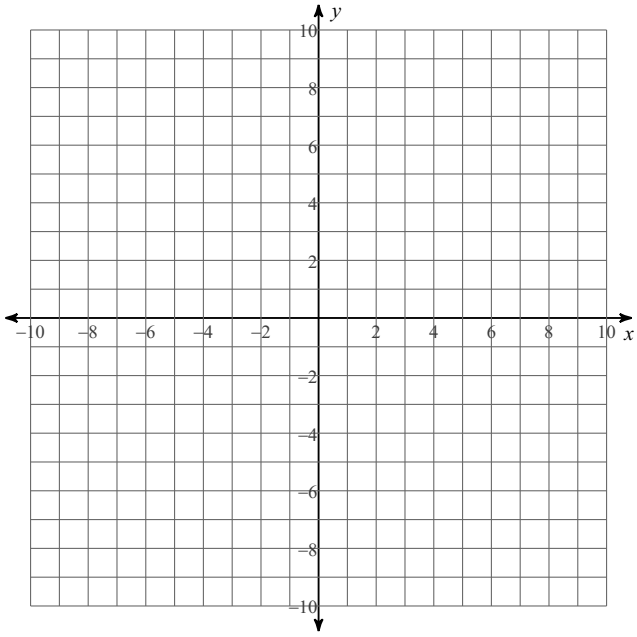


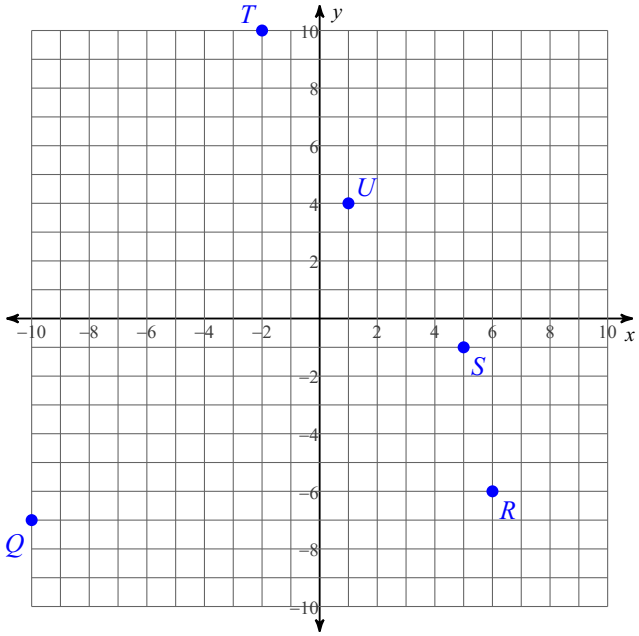
Plot each point.

27) $I(-8, 7)$ $H(7, -7)$ $G(-2, 0)$
$F(9, 1)$ $E(8, -8)$



State the coordinates of each point.

28)



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

29) $(-4, -3), (8, 1)$

30) $(-7, 6), (-10, 0)$

Find the distance between each pair of points.

31) $(-5, 4), (7, 0)$

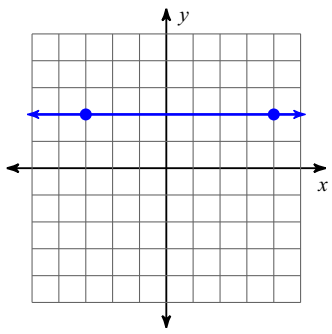
32) $(-2, 8), (-6, 5)$

33) $(0, -8), (-4, -7)$

34) $(-4, -2), (-8, -4)$

Find the slope of each line.

35)



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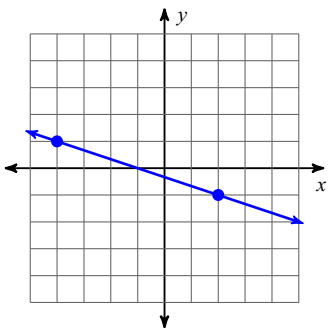


Find the slope of the line through each pair of points.

37) $(-13, -15), (10, -1)$

38) $(-4, 6), (11, 0)$

Find the slope of each line.

39) $y = 6x - 3$

40) $y = \frac{9}{5}x + 4$

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

41) $y = -\frac{6}{5}x - 3$

42) $y = -2x - 2$

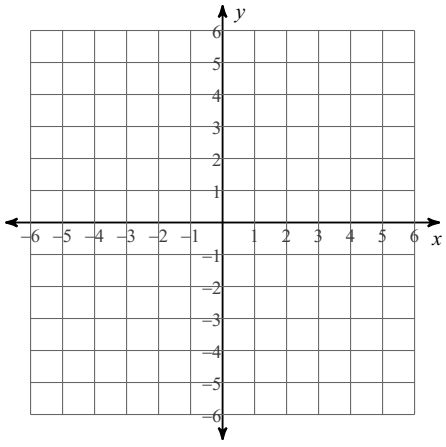
Find the slope of a line perpendicular to each given line.

43) $y = 2x - 3$

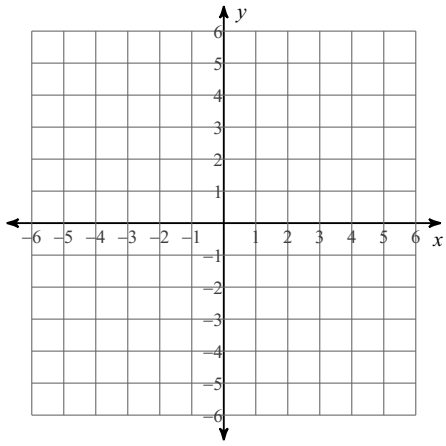
44) $y = -\frac{7}{4}x - 2$

Sketch the graph of each line.

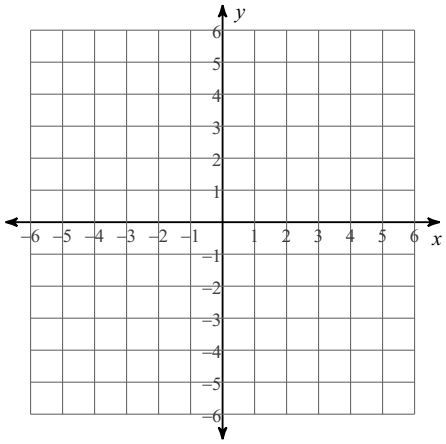
45) $y = 3x - 4$



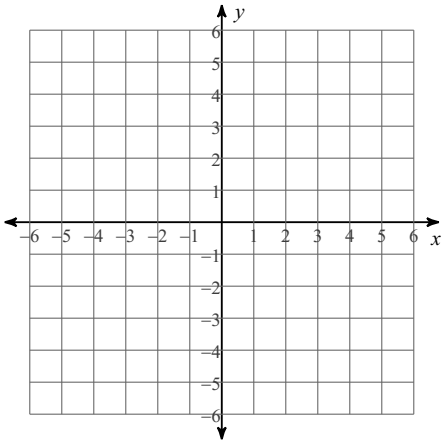
46) $y = -\frac{3}{4}x - 5$



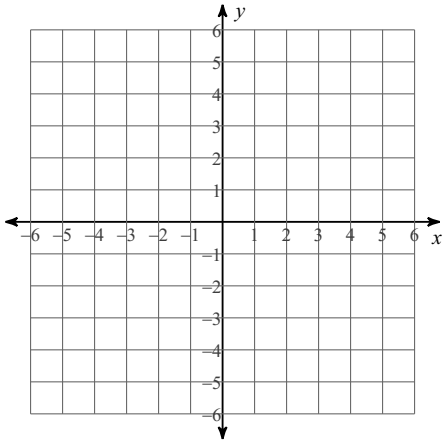
47) $6x + y = 2$



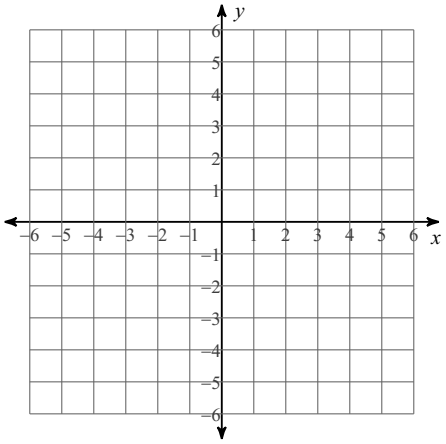
48) $3x - 2y = -10$



49) x-intercept = –4, y-intercept = –2

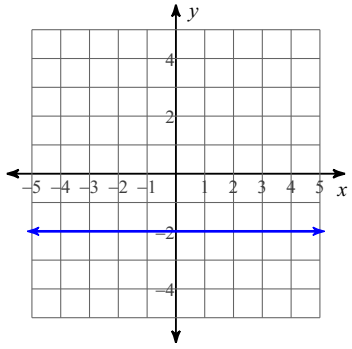


50) x-intercept = –3, y-intercept = –3

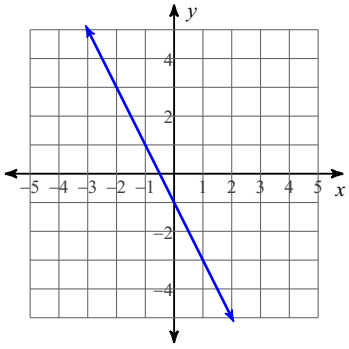


Write the slope-intercept form of the equation of each line.

51)



52)



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

53) Slope = $\frac{8}{5}$, y-intercept = 5

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

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

55) $x - 4y = 8$

56) $8x + 3y = -6$

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

57) through: $(4, -2)$, slope $= \frac{1}{2}$

58) through: $(-5, 0)$, slope $= -1$

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

59) through: $(3, -5)$ and $(2, 1)$

60) through: $(-3, 4)$ and $(-4, -3)$

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

61) through: $(2, -5)$, parallel to $y = -2x - 4$

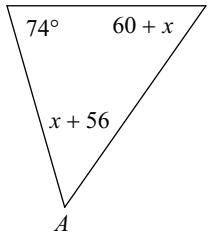
62) through: $(-5, 2)$, parallel to $y = -\frac{4}{5}x - 5$

63) through: $(-3, -5)$, perp. to $y = -\frac{8}{5}x + 1$

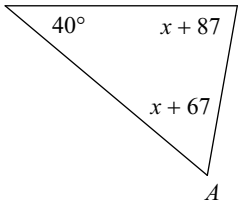
64) through: $(-5, -4)$, perp. to $y = -x - 2$

Find the measure of angle A.

65)

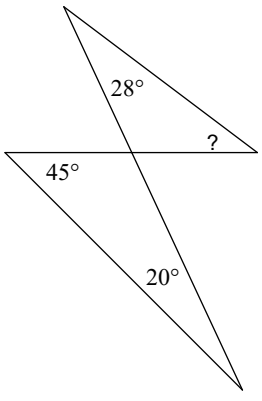


66)

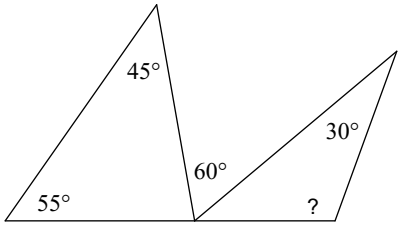


Find the measure of each angle indicated.

67)

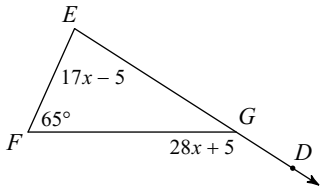


68)

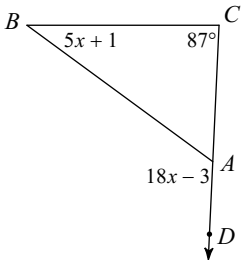


Find the measure of the angle indicated.

69) Find $m\angle DGF$.

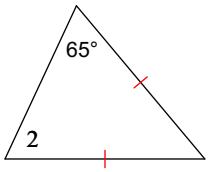


70) Find $m\angle B$.

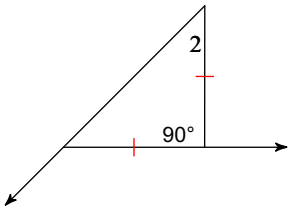


Find the value of *x*.

71) $m\angle 2 = 5x + 5$

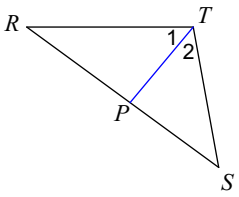


72) $m\angle 2 = x + 56$

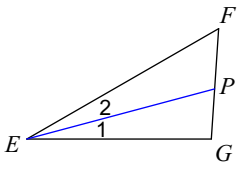


Each figure shows a triangle with one of its angle bisectors.

73) Find x if $m\angle 1 = 5x$ and $m\angle 2 = 4x + 10$.

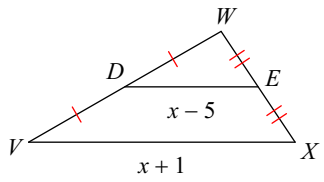


74) Find x if $m\angle 2 = 2x + 7$ and $m\angle 1 = 4x - 1$.



Solve for *x*.

75)



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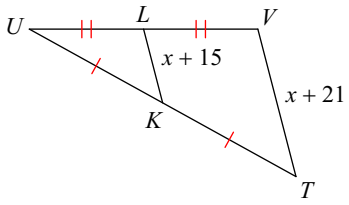
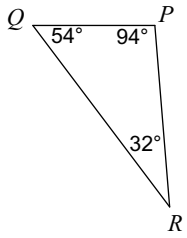
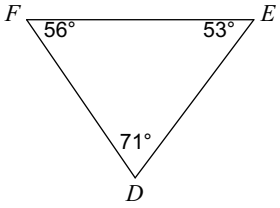


Order the sides of each triangle from shortest to longest.

77)

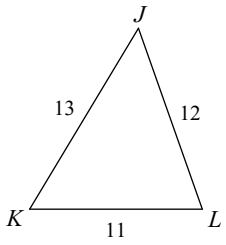


78)

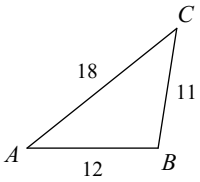


Order the angles in each triangle from smallest to largest.

79)



80)



Solve each proportion.

81) $\frac{a}{6} = \frac{5}{7}$

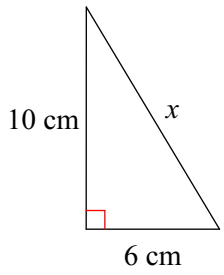
82) $\frac{5}{p+10} = \frac{6}{7}$

83) $\frac{5}{a-9} = \frac{3}{a}$

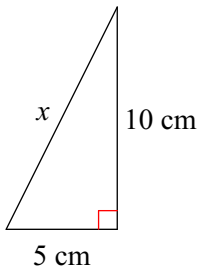
84) $\frac{a+1}{a+3} = \frac{5}{8}$

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

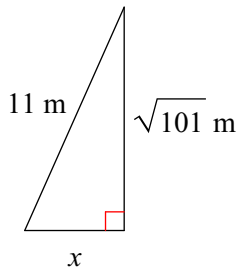
85)



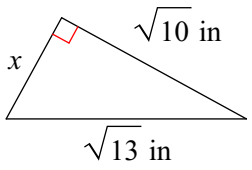
86)



87)

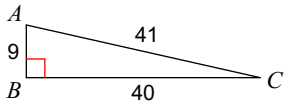


88)

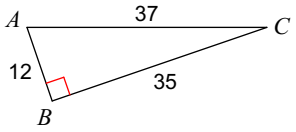


Find the value of each trigonometric ratio.

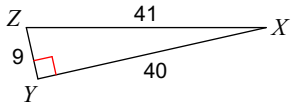
89) tan A



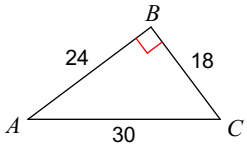
90) cos C



91) cos X

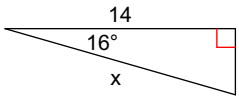


92) tan C

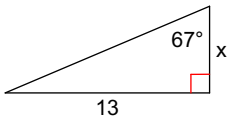


Find the missing side. Round to the nearest tenth.

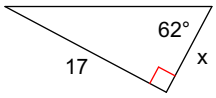
93)



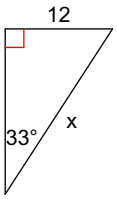
94)



95)

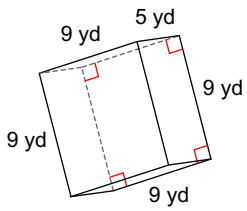


96)

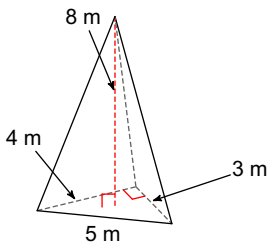


Find the volume of each figure. Round your answers to the nearest hundredth, if necessary.

97)



98)



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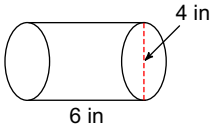
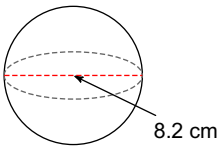


100)



----------HONORS STUDENTS: Complete the remainder of the packet.----------

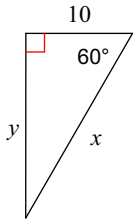
Find the other endpoint of the line segment with the given endpoint and midpoint.

101) Endpoint: $(6, -1)$, midpoint: $(-6, 3)$

102) Endpoint: $(-4, 7)$, midpoint: $(-5, 0)$

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

103)



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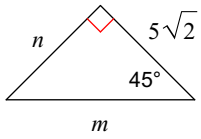
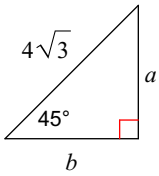
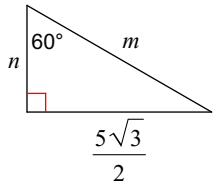


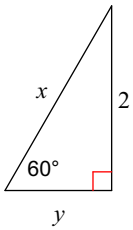
105)



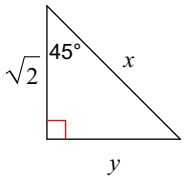
106)



107)

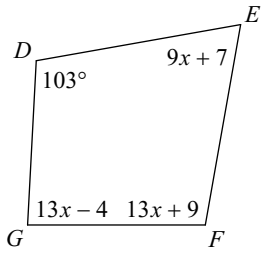


108)

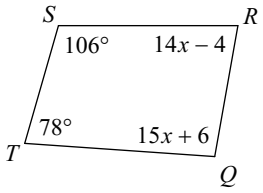


Find the measure of each angle indicated.

109) $m\angle G$

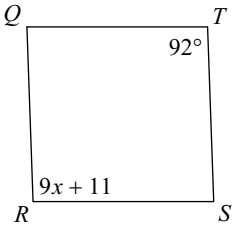


110) $m\angle Q$

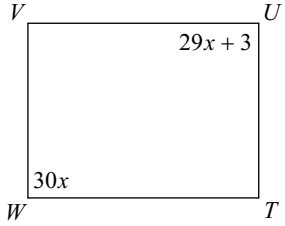


Solve for *x*. Each figure is a parallelogram.

111)

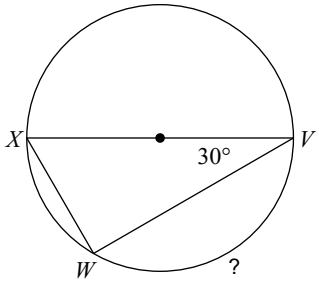


112)

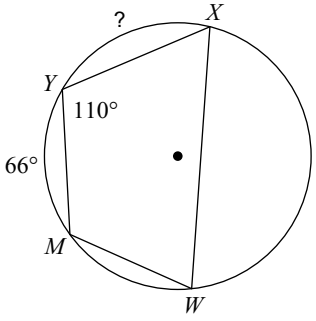


Find the measure of the arc or angle indicated.

113)

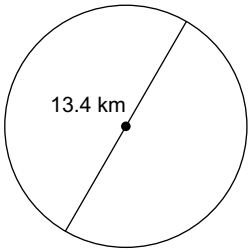


114)

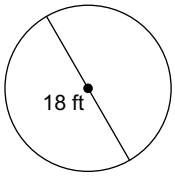


Find the area of each. Use your calculator's value of π. Round your answer to the nearest tenth.

115)

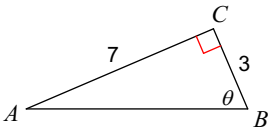


116)

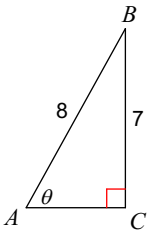


Find the measure of each angle indicated. Round to the nearest tenth.

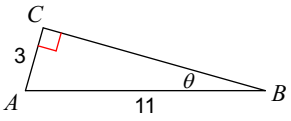
117)



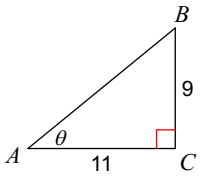
118)



119)

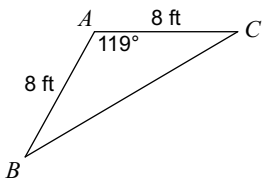


120)

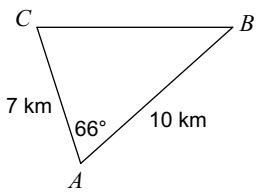


Find the area of each triangle to the nearest tenth.

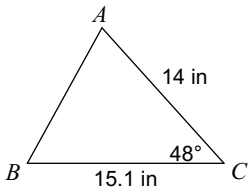
121)



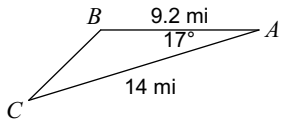
122)



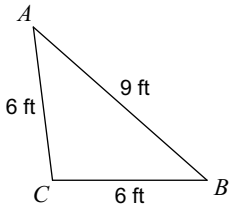
123)



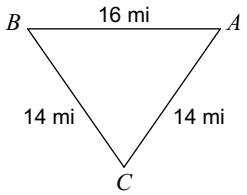
124)



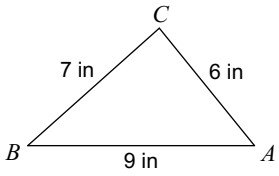
125)



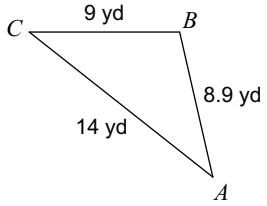
126)



127)

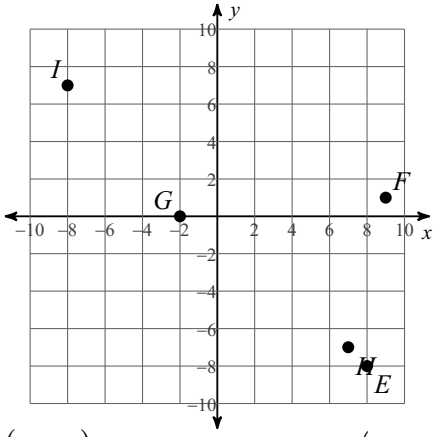


128)

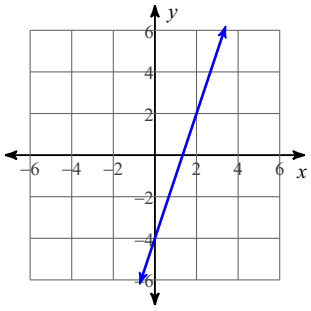


Answers to Summer Math Packet (ID: 1)

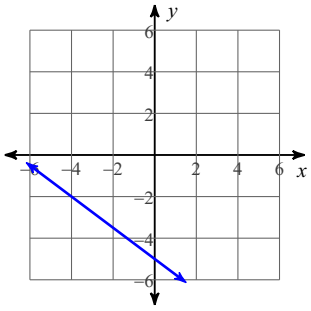
1) $\{7\}$
2) $\{5\}$
3) $\{1\}$
4) $\{3\}$
5) $\left\{\frac{11}{4}\right\}$
6) $\left\{\frac{1}{2}\right\}$
7) $\{0.1\}$
8) $\{-2.2\}$
9) $6\sqrt{6}$
10) $\sqrt{390}$
11) $15\sqrt{3}$
12) $5\sqrt{2}$
13) 14
14) $6\sqrt{10}$
15) 1
16) 3
17) 174°
18) 34°
19) 38
20) 9
21) 8
22) −5
23) 120°
24) 135°
25) 7
26) 5
27)



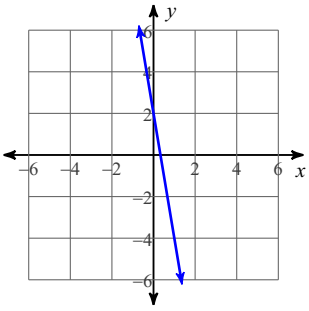
28) $Q(-10, -7)$ $R(6, -6)$ $S(5, -1)$ $T(-2, 10)$ $U(1, 4)$
29) $(2, -1)$
30) $\left(-8\frac{1}{2}, 3\right)$
31) $4\sqrt{10}$
32) 5
33) $\sqrt{17}$
34) $2\sqrt{5}$
35) 0
36) $-\frac{1}{3}$
37) $\frac{14}{23}$
38) $-\frac{2}{5}$
39) 6
40) $\frac{9}{5}$
41) $-\frac{6}{5}$
42) −2
43) $-\frac{1}{2}$
44) $\frac{4}{7}$
45)



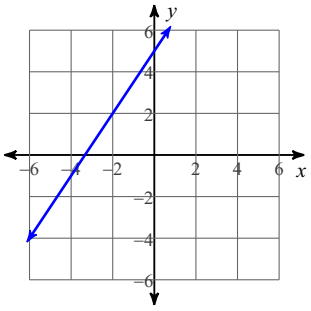
46)

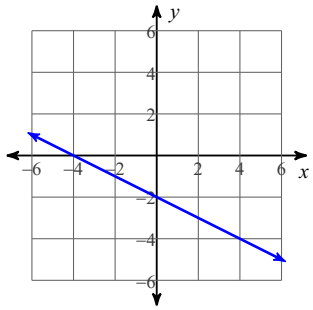


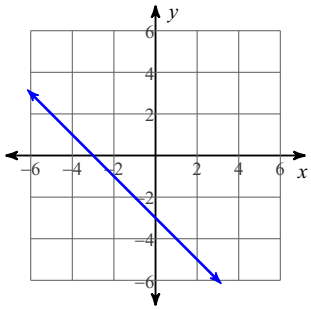
47)



48)



49) 

50) 

51) $y = -2$

52) $y = -2x - 1$

53) $y = \frac{8}{5}x + 5$

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

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

56) $y = -\frac{8}{3}x - 2$

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

58) $y = -x - 5$

59) $y = -6x + 13$

60) $y = 7x + 25$

61) $y = -2x - 1$

62) $y = -\frac{4}{5}x - 2$

63) $y = \frac{5}{8}x - \frac{25}{8}$

64) $y = x + 1$

65) 51°

66) 60°

67) 37°

68) 110°

69) 145°

70) 36°

71) 12

72) −11

73) 10

74) 4

75) 11

76) −9

77) $\overline{QP}, \overline{RP}, \overline{RQ}$

78) $\overline{FD}, \overline{ED}, \overline{FE}$

79) $\angle J, \angle K, \angle L$

80) $\angle A, \angle C, \angle B$

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

82) $\left\{-\frac{25}{6}\right\}$

83) $\left\{-\frac{27}{2}\right\}$

84) $\left\{\frac{7}{3}\right\}$

85) $2\sqrt{34}$ cm

86) $5\sqrt{5}$ cm

87) $2\sqrt{5}$ m

88) $\sqrt{3}$ in

89) $\frac{40}{9}$

90) $\frac{35}{37}$

91) $\frac{40}{41}$

92) $\frac{4}{3}$

93) 14.6

94) 5.5

95) 9.0

96) 22.0

97) 405 yd³

98) 16 m³

99) 75.4 in³

100) 288.7 cm³

101) $(-18, 7)$

102) $(-6, -7)$

103) $x = 20,\ y = 10\sqrt{3}$

104) $m = 10,\ n = 5\sqrt{2}$

105) $a = 2\sqrt{6},\ b = 2\sqrt{6}$

106) $m = 5,\ n = \frac{5}{2}$

107) $x = \frac{4\sqrt{3}}{3},\ y = \frac{2\sqrt{3}}{3}$

108) $x = 2,\ y = \sqrt{2}$

109) 87°

110) 96°

111) 9

112) 3

113) 120°

114) 74°

115) 141 km²

116) 254.5 ft²

117) 66.8°

118) 61°

119) 15.8°

120) 39.3°

121) 28 ft²

122) 32 km²

123) 78.6 in²

124) 18.8 mi²

125) 17.9 ft²

126) 91.9 mi²

127) 21 in²

128) 39 yd²