

Summer Math Packet

Evaluate each using the values given.

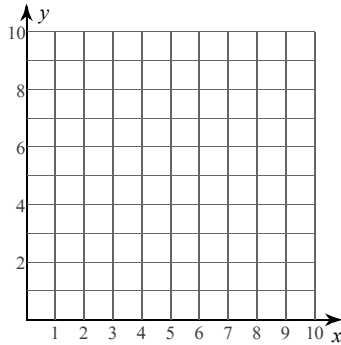
1) $h - (j - j)$; use $h = 4$, and $j = 4$

Write each as an algebraic expression.

2) 5 less than y

Plot each point.

3) $D(6, 10)$ $E(7, 4)$ $F(0, 2)$
 $G(10, 9)$ $H(1, 4)$



Solve each equation.

4) $5(3k + 4) = 140$

5) $120 = -4p - 4(8p + 6)$

6) $37 - 5r = 7(1 - 5r)$

7) $3(2x + 8) = 33 + 3x$

8) You had \$22 to spend on five avocados. After buying them you had \$12. How much did each avocado cost?

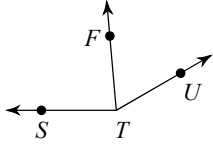
9) Shanice spent half of her weekly allowance playing arcade games. To earn more money her parents let her clean the gutters for \$6. What is her weekly allowance if she ended with \$16?

Solve each equation for the indicated variable.

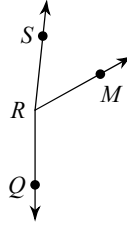
10) $\frac{k}{a} = \frac{v}{w}$, for a

11) $ma = n + p$, for a

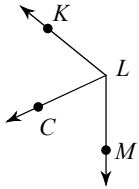
12) Find $m\angle STF$ if $m\angle STU = 150^\circ$
and $m\angle FTU = 65^\circ$.



13) Find x if $m\angle SRQ = 174^\circ$,
 $m\angle SRM = x + 62$, and $m\angle MRQ = x + 126$.

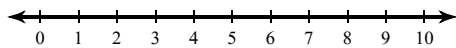


14) Find $m\angle MLC$ if $m\angle MLC = 12x + 5$,
 $m\angle CLK = -1 + 13x$, and $m\angle MLK = 129^\circ$.



Solve each inequality and graph its solution.

15) $x + 2 - 5x < -14$



Solve each problem.

16) 25 is what percent of 144?

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

17) $(12, 6), (17, 18)$

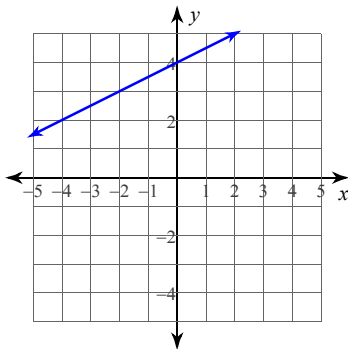
18) $(12, 19), (-12, 8)$

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

19) $3x + 2y = 8$

20) $y + 2 = -4(x - 1)$

21)



22) $-x - 35 = -10y$

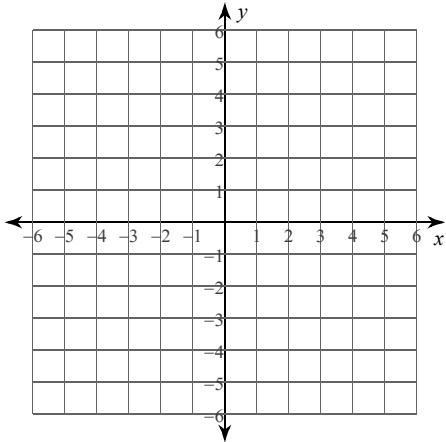
23) $-y + x = 0$

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

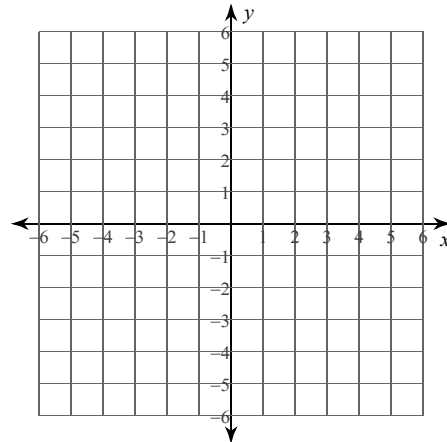
24) through: $(5, 5)$ and $(4, -2)$

Sketch the graph of each line.

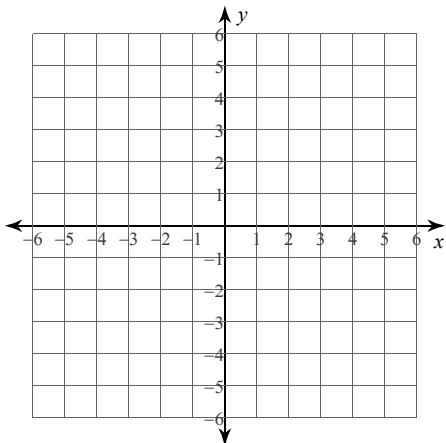
25) $y = \frac{3}{5}x - 3$



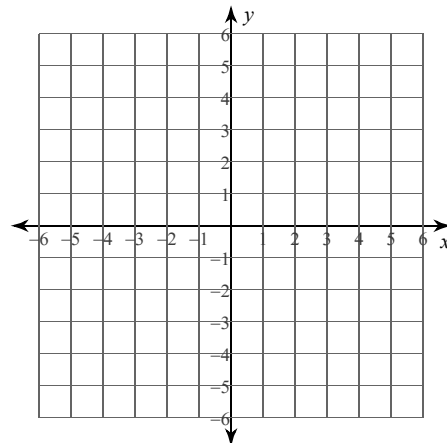
26) $3x + 4y = 8$



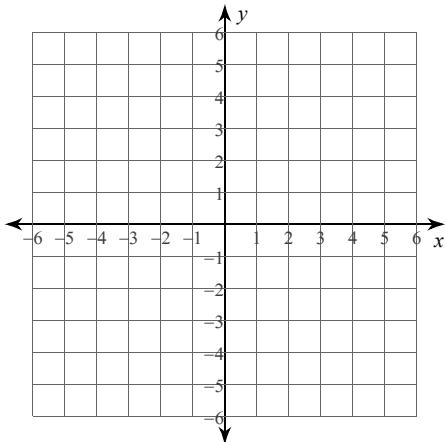
27) $4x + y = -5$



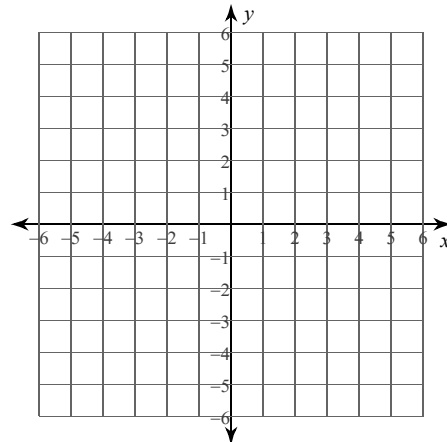
28) $y = -x + 2$



29) $0 = 4x - 3y - 3$

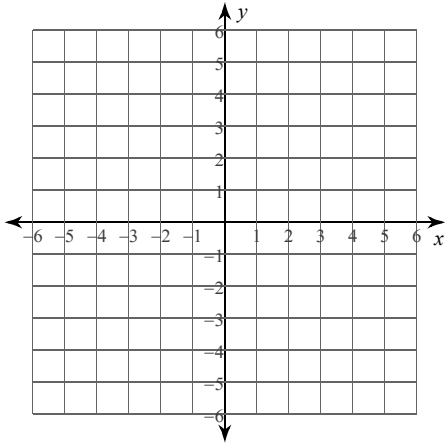


30) $0 = 6x + 16 - 8y$



Sketch the graph of each linear inequality.

31) $y \geq -\frac{8}{3}x + 5$



Solve each system by substitution.

32) $x - 8y = 11$
 $5x - 2y = 17$

Solve each system by elimination.

33) $-9x + 6y = -27$
 $5x - y = 29$

34) Jessica and Lisa are selling cheesecakes for a school fundraiser. Customers can buy New York style cheesecakes and strawberry cheesecakes. Jessica sold 7 New York style cheesecakes and 2 strawberry cheesecakes for a total of \$62. Lisa sold 14 New York style cheesecakes and 5 strawberry cheesecakes for a total of \$134. Find the cost each of one New York style cheesecake and one strawberry cheesecake.

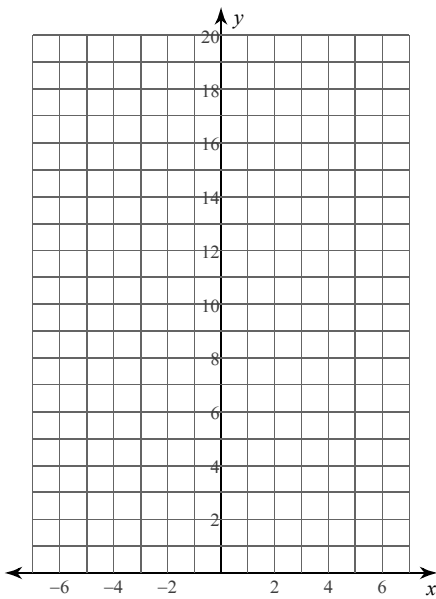
Simplify. Your answer should contain only positive exponents.

$$35) \frac{(4v^2)^2}{4v^{-2} \cdot 3v^3}$$

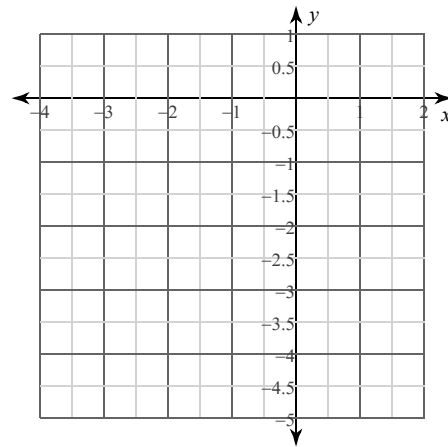
$$36) \frac{2v^3}{(2u^{-2}v^2 \cdot 2u^4v^3)^{-3}}$$

Sketch the graph of each function.

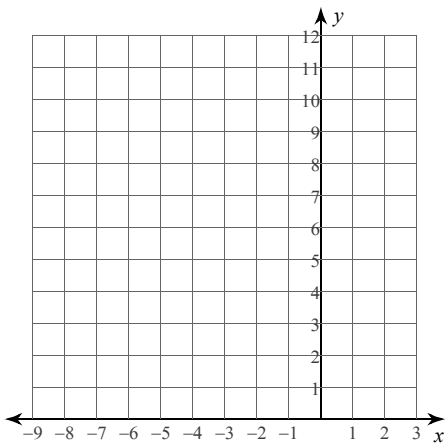
$$37) y = \left(\frac{1}{2}\right)^x$$



$$38) y = x^2 + 2x - 3$$



$$39) y = 2x^2 - 4x + 5$$



Find each product.

40) $(8k - 5)(2k + 7)$

Factor the common factor out of each expression.

41) $9a^2 + 9a + 63$

Factor each completely.

42) $15b^3 - 25b^2 + 6b - 10$

43) $m^2 - 5m - 14$

44) $6n^2 + n - 15$

45) $9v^2 + 24v + 16$

46) $25m^2 - 9$

Solve each equation by taking square roots.

47) $6p^2 - 1 = 5$

Solve each equation with the quadratic formula.

48) $4n^2 + 8n = 45$

Simplify.

49) $\sqrt{12}$

50) $2\sqrt{18}$

51) $\sqrt{125}$

52) $\sqrt{72}$

53) $-2\sqrt{5} - 2\sqrt{5}$

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

55) $3\sqrt{2} - 2\sqrt{2}$

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

57) $\sqrt{15} \cdot -4\sqrt{3}$

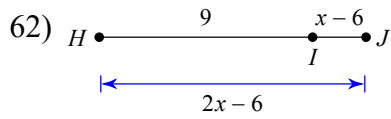
58) $\sqrt{8} \cdot \sqrt{3}$

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

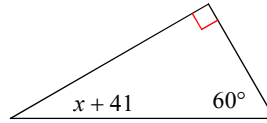
60) $\frac{\sqrt{5}}{\sqrt{2}}$

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

Solve for x .

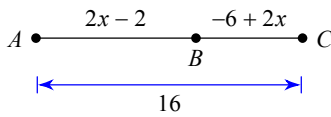


63)



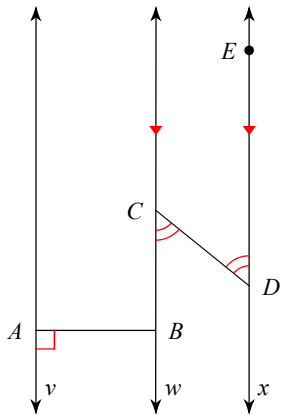
Find the length indicated.

64) Find AB

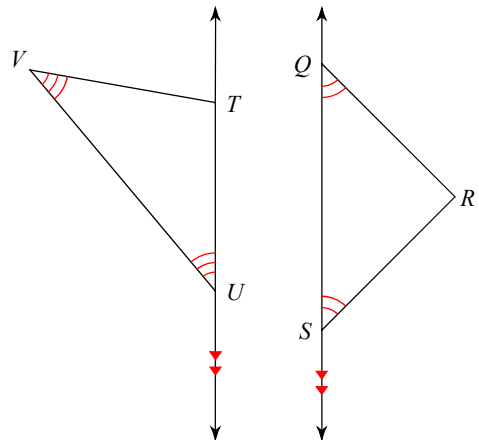


List all information given by the marks on the diagram.

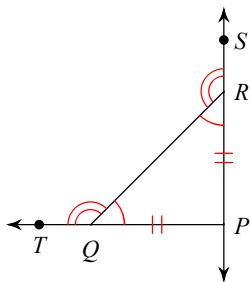
65)



66)



67)

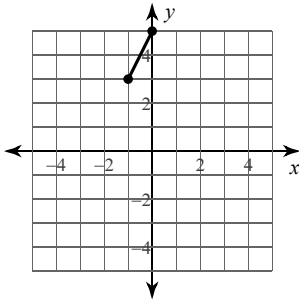


Find the midpoint of the line segment with the given endpoints.

68) $(2, 7), (6, 6)$

Find the midpoint of each line segment.

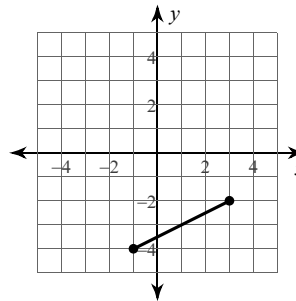
69)



Find the distance between each pair of points.

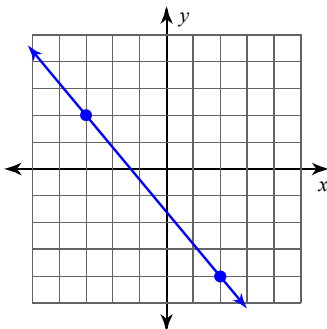
70) $(-7, 1), (-5, -2)$

71)



Find the slope of each line.

72)



73) $y = -3x - 2$

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

74) $y = \frac{2}{3}x - 4$

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

75) $y = -\frac{9}{4}x - 4$

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

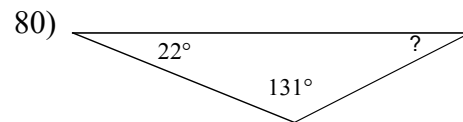
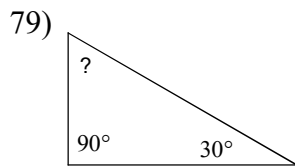
76) Slope = $-\frac{4}{5}$, y-intercept = 0

Write the standard form of the equation of the line through the given points.

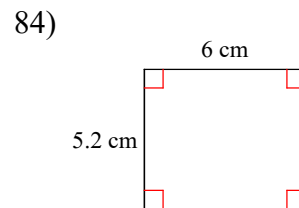
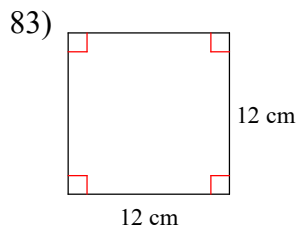
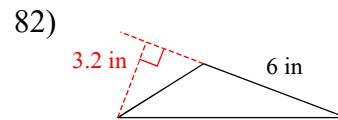
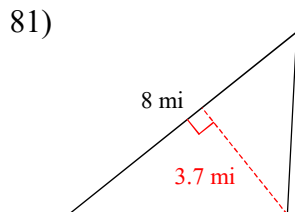
77) through: (5, 0) and (-4, 4)

78) through: (-5, 2) and (-3, -2)

Find the measure of each angle indicated.

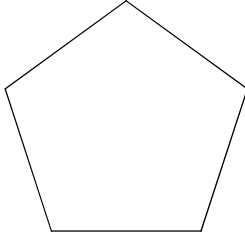


Find the area of each.

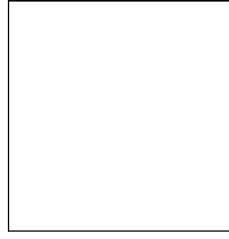


Write the name of each polygon.

85)



86)



Solve each proportion.

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

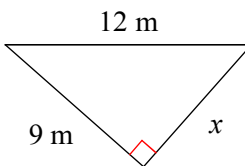
88) $\frac{3}{9} = \frac{5}{p}$

89) $\frac{7}{p+3} = \frac{10}{4}$

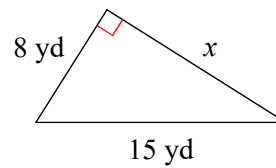
90) $\frac{x-8}{2} = \frac{6}{7}$

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

91)

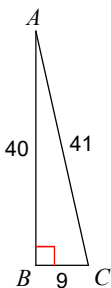


92)

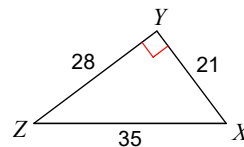


Find the value of each trigonometric ratio.

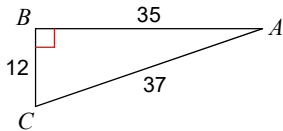
93) $\tan A$



94) $\tan Z$

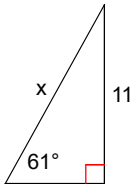


95) $\sin C$

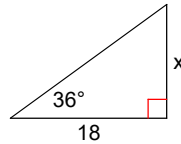


Find the missing side. Round to the nearest tenth.

96)

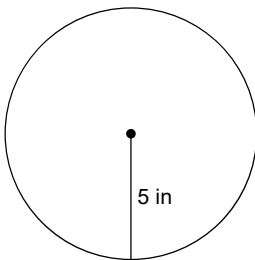


97)



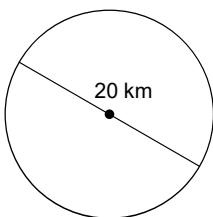
Find the area of each. Use your calculator's value of π . Round your answer to the nearest tenth.

98)



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

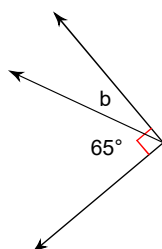
99)



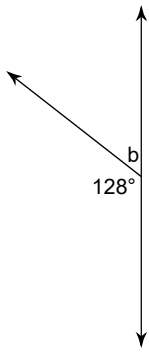
100) radius = 6 mi

Find the measure of angle b.

101)

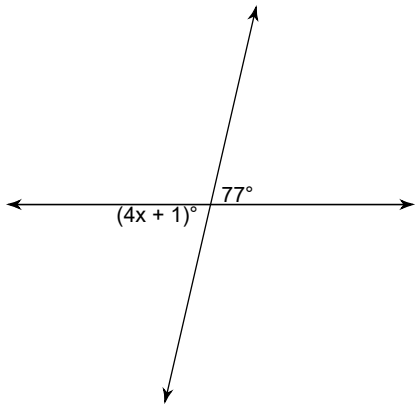


102)

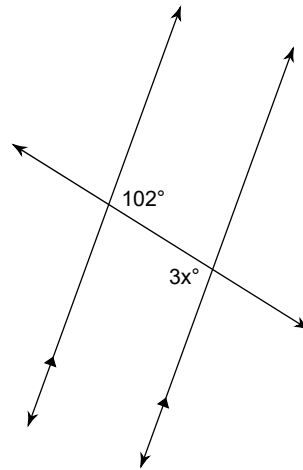


Find the value of x.

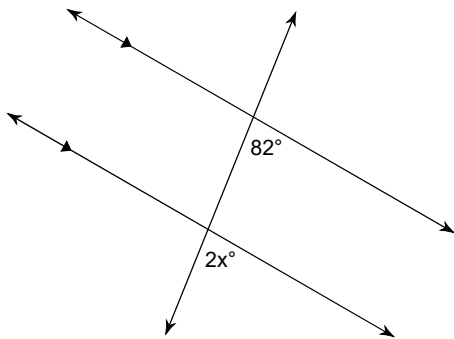
103)



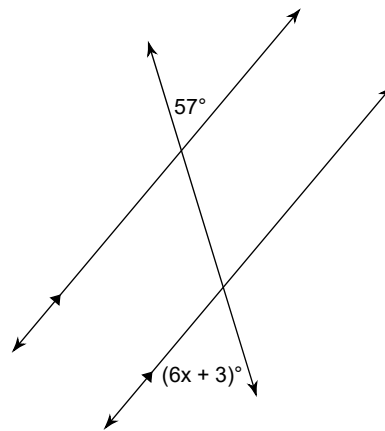
104)



105)

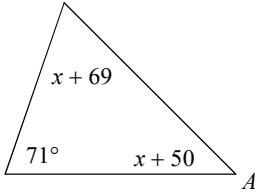


106)



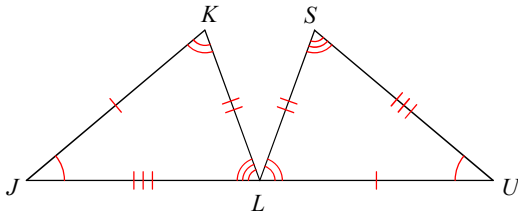
Find the measure of angle A.

107)



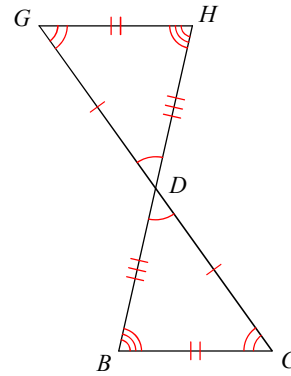
Complete each congruence statement by naming the corresponding angle or side.

108) $\triangle JKL \cong \triangle ULS$



$\angle K \cong ?$

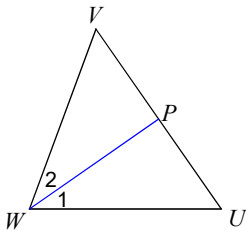
109) $\triangle DCB \cong \triangle DGH$



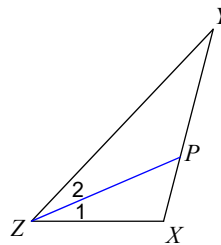
$\overline{CB} \cong ?$

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

110) Find $m\angle UWV$ if $m\angle 1 = 35^\circ$.

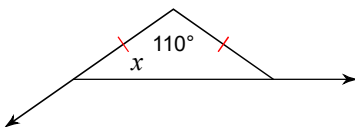


111) $m\angle 2 = 2x + 11$ and $m\angle XZY = 7x + 4$.
Find x .

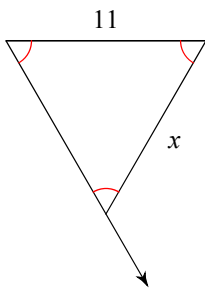


Find the value of x .

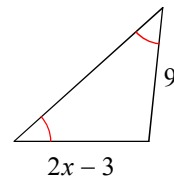
112)



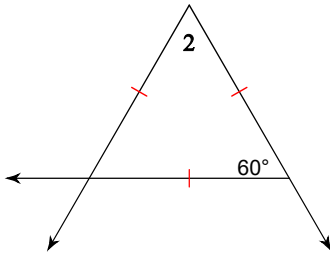
113)



114)

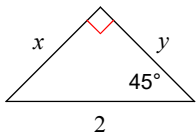


115) $m\angle 2 = 4x + 16$

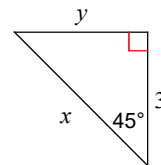


Find the missing side lengths. Leave your answers as radicals in simplest form.

116)

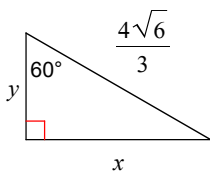


117)

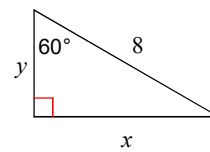


Honors: Find the missing side lengths. Leave your answers as radicals in simplest form.

118)

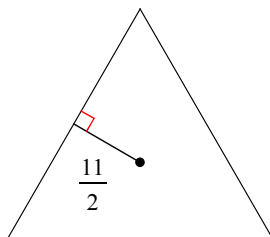


119)

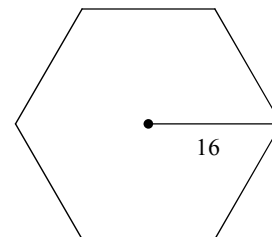


Honors: Find the area of each regular polygon. Round your answer to the nearest tenth if necessary.

120)

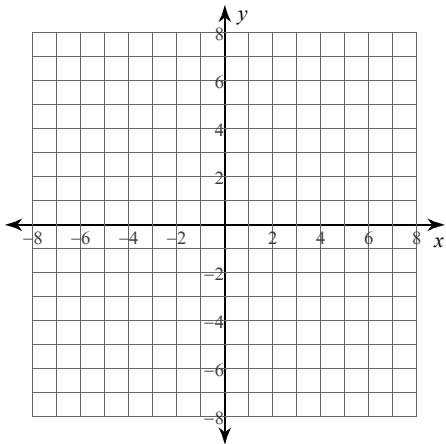


121)

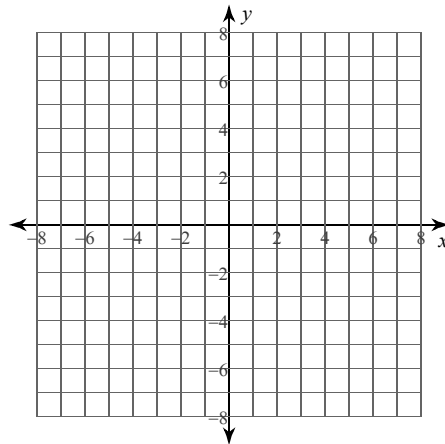


Identify the center and radius of each. Then sketch the graph.

122) $(x + 1)^2 + (y + 1)^2 = 25$



123) $(x + 3)^2 + (y - 4)^2 = 1$



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

124) Center: $(3, 4)$
Radius: 10

125) Center: $(5, -4)$
Point on Circle: $(-6, 2)$

126) Ends of a diameter: $(11, 15)$ and $(1, -7)$

127)

