

Summer Review Assignment

Name _____

General Directions: do all ODD problems, showing all appropriate work. Check the solutions against the answer key and make corrections. If time permits, work on the even problems for additional practice.

For problems 1 - 10, solve each equation.

1) $3(5r - 2) = 99$

2) $-99 = -3(5p + 3)$

3) $-2(-6x - 7) + 1 = -81$

4) $195 = 5(3 + 6n)$

5) $94 = -2(1 + 6k)$

6) $-3(5n - 6) - 1 = 137$

7) $4(1 - 2x) - 8(8x + 1) = -4$

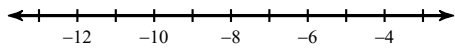
8) $44 = -8(1 - 6k) - 2(k - 3)$

9) $-3(5 - 3n) - 7(n - 3) = 2$

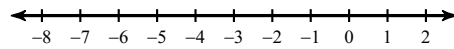
10) $-17 = -5(n - 6) - 6(1 + 6n)$

Solve each inequality and graph its solution.

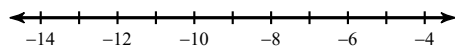
11) $111 \geq -3(3 + 5r)$



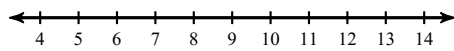
12) $130 \leq -5(4 + 6n)$



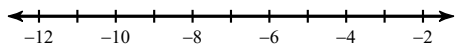
13) $3(8 - 3n) > 87$



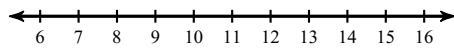
14) $-2(-7x + 2) > 94$



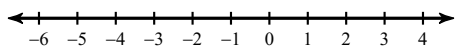
15) $-2(5p - 1) < 82$



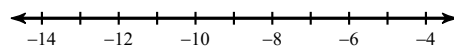
16) $85 < 5(2v + 1)$



17) $-5(x - 3) - 5(-5x - 8) \geq 35$

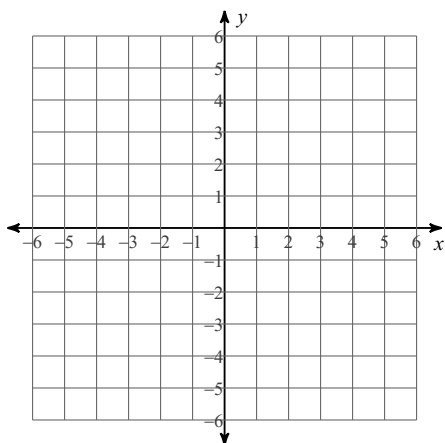


18) $-77 \geq -(1 - 6x) + 7(x + 4)$

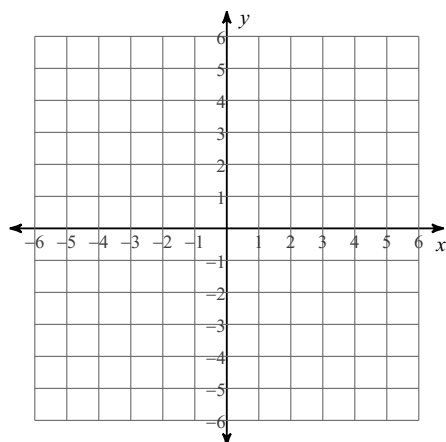


Sketch the graph of each line.

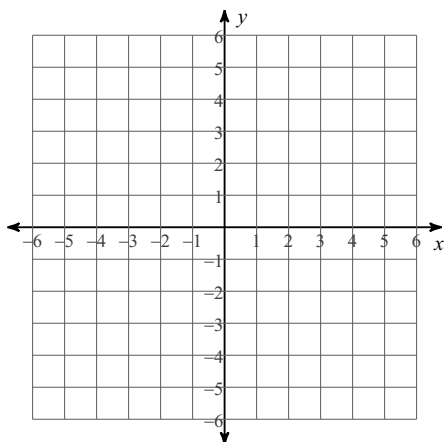
19) $y = \frac{1}{2}x + 3$



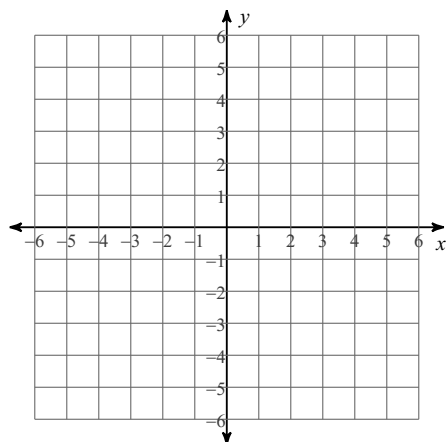
20) $y = -2x + 2$



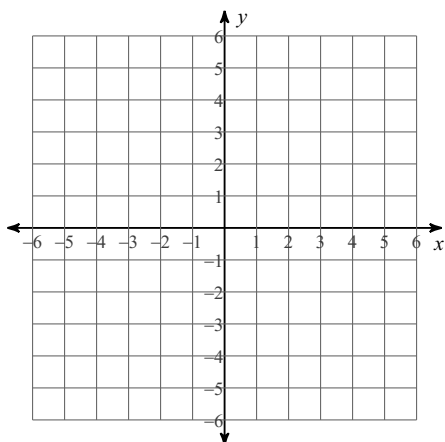
21) $y = 3x - 3$



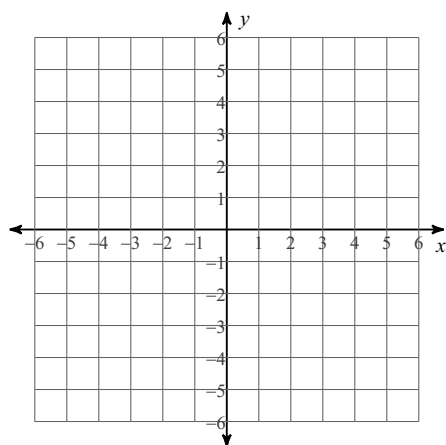
22) $y = -4$



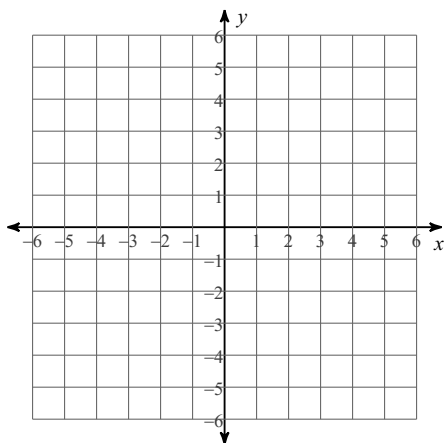
23) $y = -2x - 3$



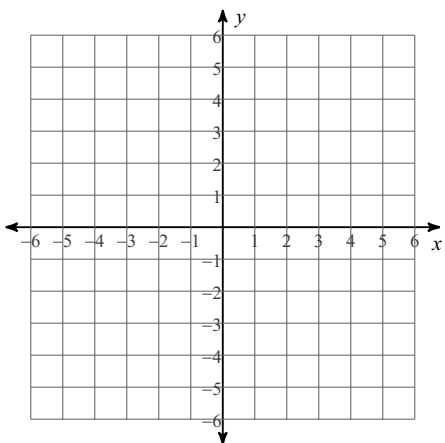
24) $y = -\frac{1}{2}x + 3$



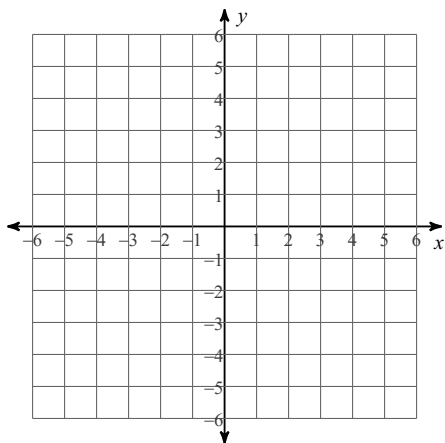
25) $y = 1$



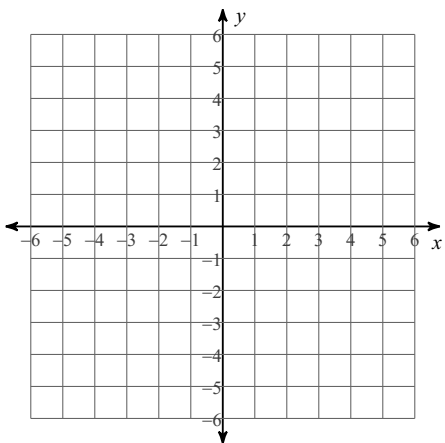
26) $x + y = 0$



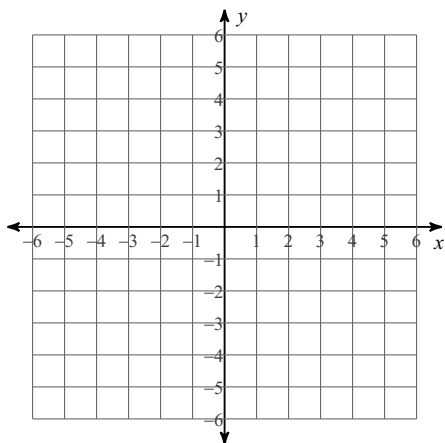
27) $x = -3$



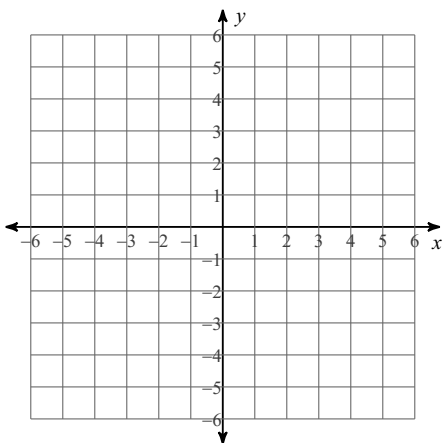
28) $x - 4y = 0$



29) $x - 2y = -2$

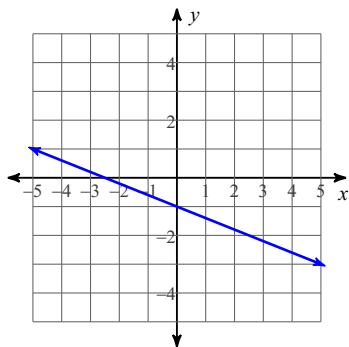


30) $x + 2y = 6$

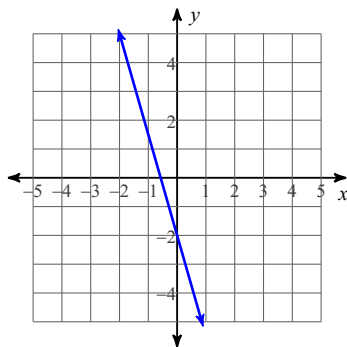


Write the slope-intercept form of the equation of each line.

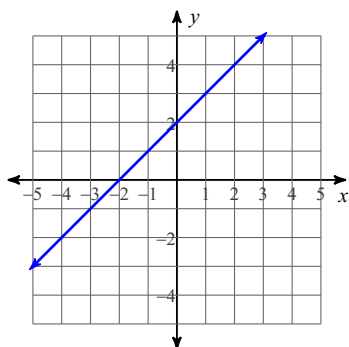
31)



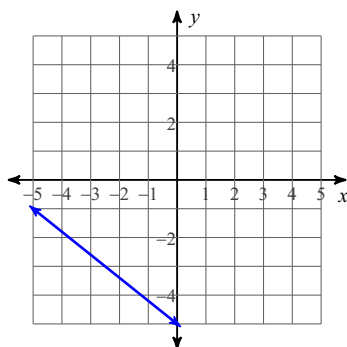
32)



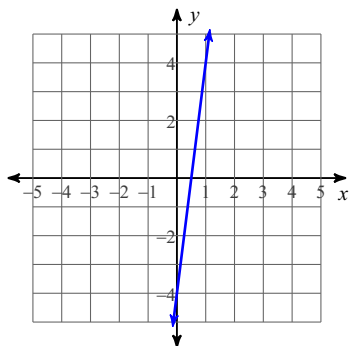
33)



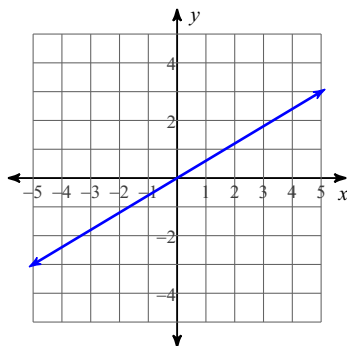
34)



35)



36)



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

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

38) Slope = -5, y-intercept = -4

39) Slope = $-\frac{3}{2}$, y-intercept = 1

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

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

41) $7x + 6y = -12$

42) $4x + y = 2$

43) $x + 2y = 6$

44) $y = 3$

45) $3x - 8y = -64$

46) $3x + 2y = 8$

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

47) through: $(-4, 3)$, slope = undefined

48) through: $(1, -4)$, slope = $-\frac{5}{2}$

49) through: $(3, 5)$, slope = $\frac{8}{3}$

50) through: $(-5, 2)$, slope = $-\frac{7}{3}$

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

51) through: $(0, -5)$ and $(-2, -3)$

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

53) through: $(5, -4)$ and $(-3, 3)$

54) through: $(-4, 1)$ and $(-2, 4)$

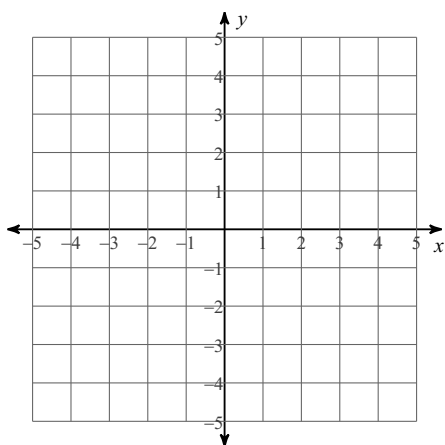
55) through: $(-2, 0)$ and $(0, -3)$

56) through: $(0, 4)$ and $(2, -2)$

Solve each system by graphing.

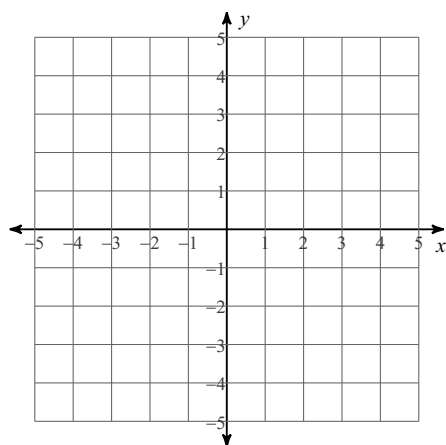
57) $y = \frac{1}{4}x + 4$

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

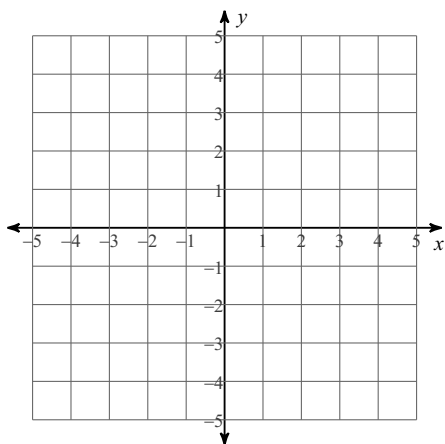


58) $y = -\frac{2}{3}x - 1$

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

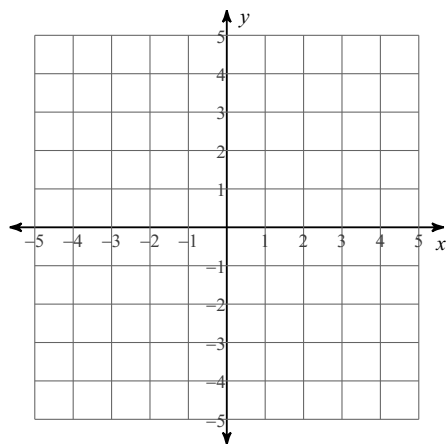


59) $y = -x + 2$
 $y = 2x - 1$

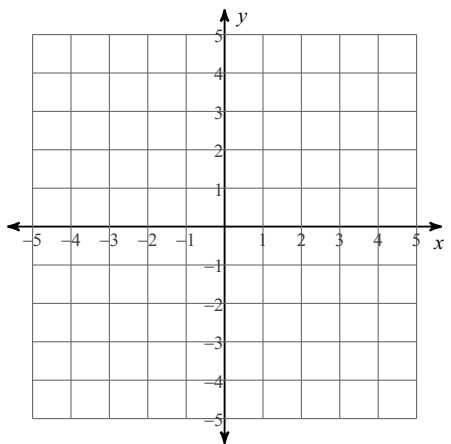


60) $y = -\frac{1}{2}x + 3$

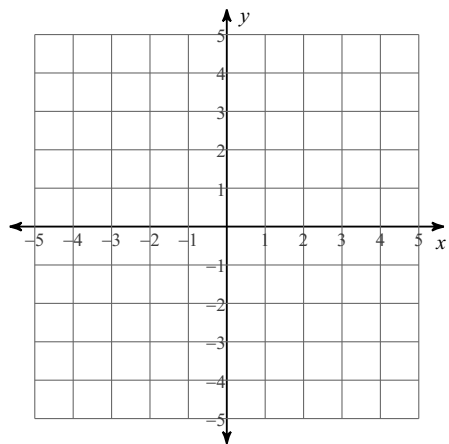
$$y = \frac{3}{4}x - 2$$



61) $y = -3x + 4$
 $y = 2x - 1$



62) $y = -6x + 2$
 $y = -x - 3$



Solve each system by substitution.

63) $y = -5x - 19$
 $4x - 2y = -4$

64) $-x - 3y = -23$
 $y = 6x + 14$

65) $y = -8x + 14$
 $8x - 2y = -4$

66) $5x - 4y = 6$
 $y = x - 1$

Solve each system by elimination.

$$\begin{array}{l} 67) \ 2x + 6y = -30 \\ \quad 5x - 12y = 6 \end{array}$$

$$\begin{array}{l} 68) \ 4x - 7y = 2 \\ \quad 10x - 14y = -16 \end{array}$$

$$\begin{array}{l} 69) \ x - 10y = -9 \\ \quad -3x + 2y = 27 \end{array}$$

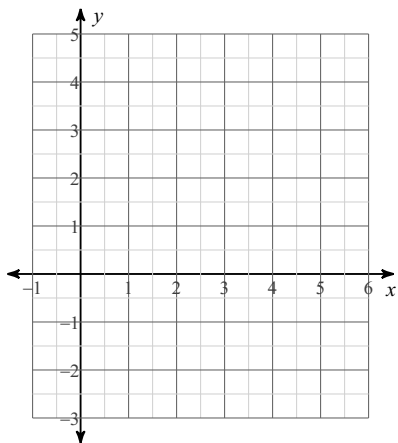
$$\begin{array}{l} 70) \ -6x + 2y = 10 \\ \quad 3x + 4y = 20 \end{array}$$

$$\begin{array}{l} 71) \ 10x + 10y = 27 \\ \quad -5x - 5y = -10 \end{array}$$

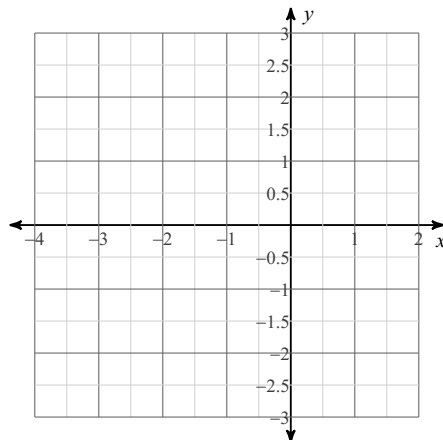
$$\begin{array}{l} 72) \ 6x - 3y = 12 \\ \quad -x + 4y = 12 \end{array}$$

Identify the vertex, and whether the parabola opens up or down. Create a table of 5 points (centered at the vertex), and use these points to sketch the graph of each function.

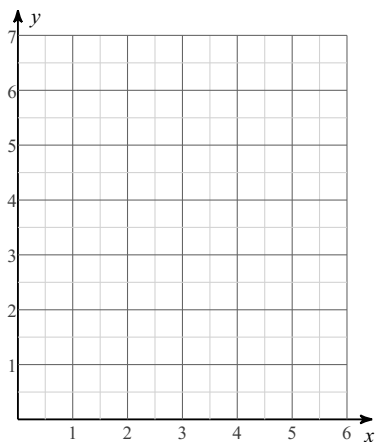
73) $y = -\frac{1}{2}(x - 4)^2 + 2$



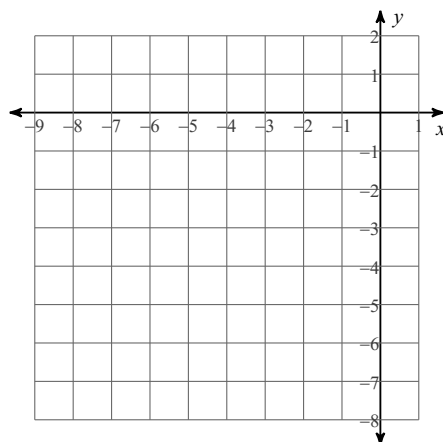
74) $y = (x + 2)^2 - 2$



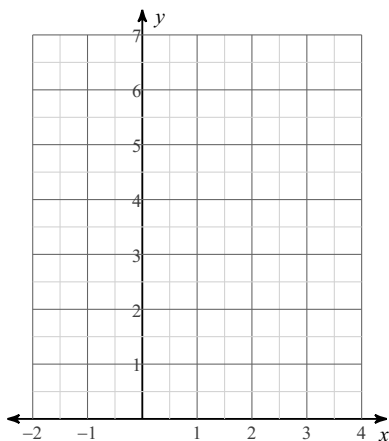
75) $y = (x - 3)^2 + 2$



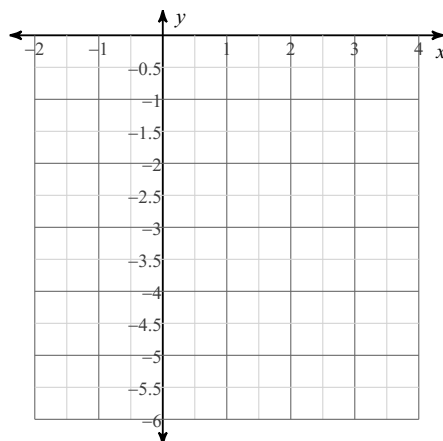
76) $y = -2(x + 3)^2 + 1$



77) $y = (x - 2)^2 + 2$



78) $y = -(x - 2)^2 - 1$



Factor each completely. Remember to always begin by looking for, and factoring out, the greatest common factor.

79) $x^3 + 5x^2 - 6x$

80) $x^2 + 20x + 100$

81) $4r^2 + 16r - 240$

82) $3x^3 + 27x^2$

83) $r^4 - 11r^3 + 18r^2$

84) $m^2 + 2m - 8$

85) $6x^2 + 36x - 240$

86) $b^3 - 5b^2$

87) $25k^2 - 9$

88) $16n^2 - 25$

89) $p^2 - 16$

90) $8p^2 - 50$

91) $125x^2 - 5$

92) $9x^2 - 4$

Solve each equation by factoring. Remember to begin by getting 0 on one side, then factoring the other side and setting each factor equal to 0.

93) $8x^2 = -24x + 320$

94) $x^2 + 5x = 6$

95) $p^2 + 9p = -14$

96) $p^2 = 5p + 24$

97) $n^2 = 12 - n$

98) $6r^2 + 24r = -18$

Simplify each expression.

99) $(3m^3 + 7m - 6m^4) - (7m^4 - 5m^3 + 2m)$

100) $(3m^3 - 5m^2 + 4m^4) - (4m^3 + 8m^4 - 3m^2)$

101) $(3p - 7p^3 + 2) - (3 + 2p^3 - 6p)$

102) $(7n + n^4 + 3) + (8n^4 + 7n - 3n^2)$

Find each product.

103) $(8p - 3)(3p + 6)$

104) $(4x - 5)(x - 7)$

$$105) (8a + 4)(8a - 3)$$

$$106) (5x - 2)(8x - 3)$$

$$107) (5b + 6)(5b^2 + 4b + 6)$$

$$108) (6n + 8)(2n^2 + n + 8)$$

$$109) (x - 2)(3x^2 + 8x - 8)$$

$$110) (5n + 8)(3n^2 + 3n + 5)$$

$$111) (4x - 1)(4x + 1)$$

$$112) (2n - 4)(2n + 4)$$

$$113) (4x + 1)^2$$

$$114) (7n - 3)^2$$

Use grouping to factor each expression completely.

$$115) 20x^3 - 5x^2 - 4x + 1$$

$$116) 32x^3 - 8x^2 - 4x + 1$$

$$117) 25k^3 + 30k^2 + 40k + 48$$

$$118) 7k^3 + 42k^2 + 6k + 36$$

Evaluate each function.

119) $g(t) = 3t + 1$; Find $g(-5)$

120) $p(x) = 3x - 5$; Find $p(-5)$

121) $k(n) = 2n + 1$; Find $k(8)$

122) $g(x) = 2x + 2$; Find $g(-7)$

123) $f(a) = -3a^2 + 2$; Find $f(6)$

124) $g(n) = n^2 + 5n$; Find $g(1)$

125) $k(n) = n^2 + 1$; Find $k(2)$

126) $w(x) = x^2 + 5x$; Find $w(-3)$

127) $f(t) = |-3t + 3|$; Find $f(-8)$

128) $w(n) = -2n - 4$; Find $w(-5)$

129) $w(t) = 3|-t|$; Find $w(8)$

130) $k(n) = |3n + 3|$; Find $k(6)$

131) $k(x) = |x| + 2$; Find $k(-6)$

132) $f(n) = -|n|$; Find $f(1)$

133) $k(a) = 3^{a-2}$; Find $k(0)$

134) $p(x) = 5^{-x-1}$; Find $p(1)$

135) $p(a) = 3^{2a} + 3$; Find $p(0)$

136) $k(n) = -3 \cdot 2^n$; Find $k(-2)$

Simplify.

137) $\sqrt{27n}$

138) $\sqrt{8r}$

139) $\sqrt{18n}$

140) $\sqrt{12m}$

141) $-2\sqrt{6} - \sqrt{6} + 2\sqrt{12}$

142) $2\sqrt{20} - \sqrt{8} + 3\sqrt{2}$

143) $-3\sqrt{2} + 2\sqrt{45} - 2\sqrt{45}$

144) $-2\sqrt{18} + 2\sqrt{12} + 2\sqrt{27}$

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

146) $-3\sqrt{24} - \sqrt{24} - 3\sqrt{45}$

147) $\sqrt{6}(\sqrt{2} + \sqrt{6})$

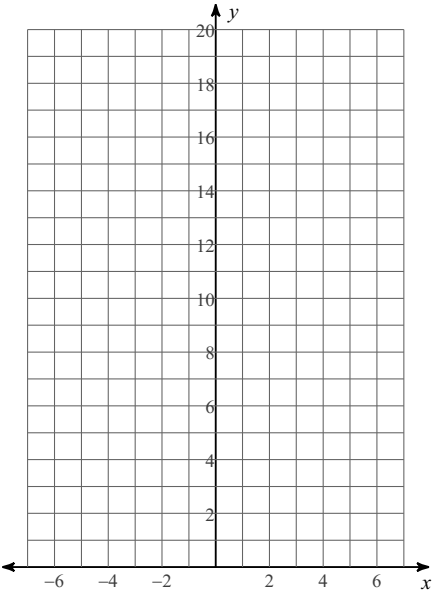
148) $2\sqrt{2}(-5\sqrt{6} + 4\sqrt{10})$

149) $(2 + \sqrt{5})(4 + \sqrt{5})$

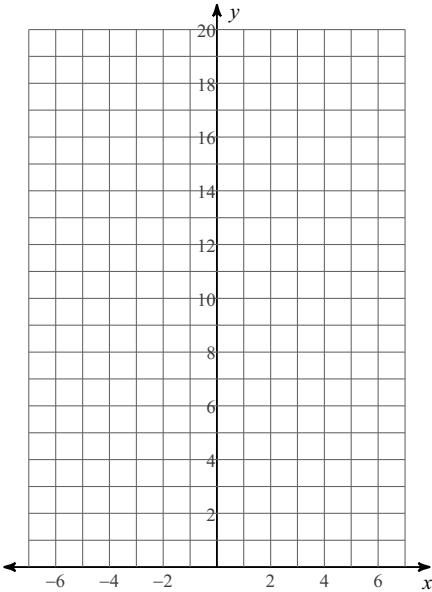
150) $(\sqrt{3} - 2)(\sqrt{3} - 1)$

Make a table of values for each function. Then use the table to sketch the graph of each function.

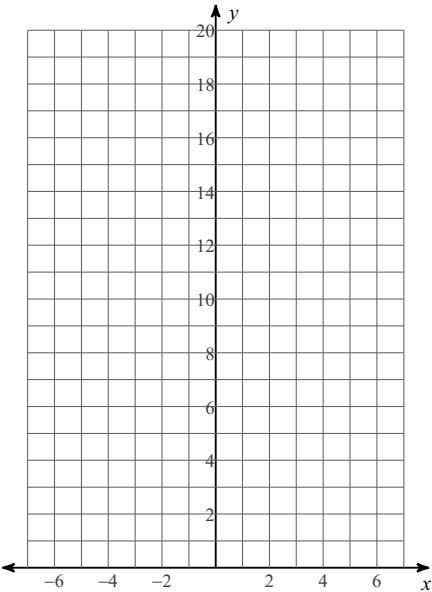
151) $y = 3^x$



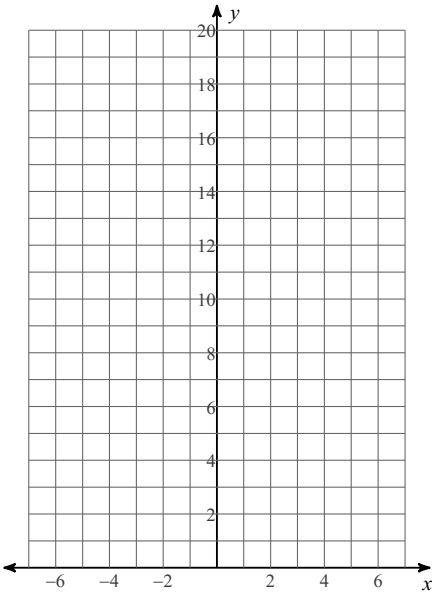
152) $y = 2^x$



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

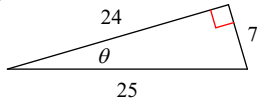


154) $y = \left(\frac{1}{3}\right)^x$

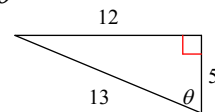


Find the value of the trig function indicated.

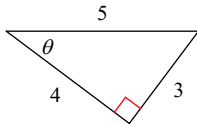
155) $\sin \theta$



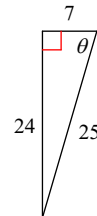
156) $\cos \theta$



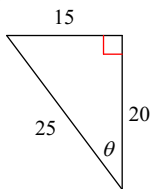
157) $\tan \theta$



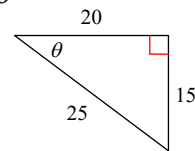
158) $\tan \theta$



159) $\cos \theta$



160) $\sin \theta$



In each triangle ABC, angle C is a right angle. Find the value of the trig function indicated. Hint: begin by drawing each triangle.

161) Find $\tan A$ if $a = 3$, $b = 6$

162) Find $\sin A$ if $c = 14$, $b = 12$

163) Find $\cos A$ if $b = 9$, $a = 3$

164) Find $\tan A$ if $b = 15$, $a = 15$

Use your calculator to find the value of each. Round your answers to the nearest ten-thousandth.

165) $\sin 5^\circ$

166) $\cos 61^\circ$

167) $\sin 45^\circ$

168) $\sin 50^\circ$

169) $\cos 75^\circ$

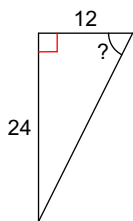
170) $\cos 69^\circ$

171) $\sin 75^\circ$

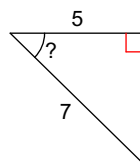
172) $\sin 21^\circ$

Use your calculator to find the measure of the indicated angle to the nearest degree.

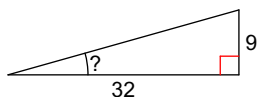
173)



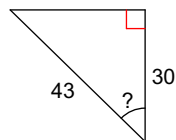
174)



175)



176)



Use your calculator to find each angle measure to the nearest degree.

177) $\sin A = 0.2756$

178) $\cos Y = 0.1045$

179) $\tan X = 4.0108$

180) $\tan Y = 0.8693$