



**ST. BRENDAN**  
**HIGH SCHOOL**

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**College Algebra  
(College Prep)  
Summer Math Packet**

*Congratulations! You will soon be learning College Algebra!*

This summer math packet is a review of some of the concepts learned in your previous course that are needed when you begin your College Algebra course in August. It will assure that all students begin the school year on the same page and with equal opportunity to learn and build upon mathematical concepts that should have been learned in previous courses.

**Instructions for completing the packet:**

- Please print the packet or use loose leaf paper to complete the packet by hand showing all work. Work must be neat and legible.
- Please use your previous class notes or the websites provided to help you if you need reminders on how to complete some practice problems.
- Take notes as you complete your work. You will be given a quiz on this material the first week of school.
- Work on the packet with your friends. Help each other. Every student is responsible for knowing the material in this packet when you return in August. We will review as a team and everyone will be expected to participate.
- Bring your packet to our first class together. It will be collected for a grade. Only packets done with paper and pencil will be accepted.

**Helpful Websites:**

<http://www.mathtv.com/>

<http://www.purplemath.com/modules/index.htm>

<https://www.khanacademy.org>

**Helpful for graphing functions:**

<https://www.education.ti.com/en/resources/family-of-functions>

Name \_\_\_\_\_

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Simplify the expression.

1)  $22 - [10 - (4 - 7)] + (5 - 7)^3$

1) \_\_\_\_\_

Find the value of the algebraic expression at the given replacement value.

2)  $\frac{y - 3x}{6x + xy}$  when  $x = -4$ ,  $y = 3$

2) \_\_\_\_\_

Solve the equation.

3)  $-3(k - 5) - (-4k - 2) = 4$

3) \_\_\_\_\_

4)  $\frac{x + 4}{6} + \frac{x - 1}{2} = \frac{5}{6}$

4) \_\_\_\_\_

5)  $\frac{1}{4}(x - 12) - \frac{1}{9}(x - 9) = x - 5$

5) \_\_\_\_\_

6)  $1.5x + 2.8 = 0.7x - 0.08$

6) \_\_\_\_\_

Write the solution set using interval notation.

7)  $3(x + 7) \leq 4(x - 8)$

7) \_\_\_\_\_

8)  $\frac{-7x - 20}{4} < 37$

8) \_\_\_\_\_

9)  $\frac{1}{3}(5x - 12) \geq x - 2$

9) \_\_\_\_\_

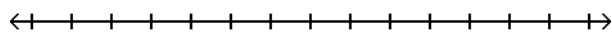
10)  $\frac{3}{4} + \frac{5}{6} \leq \frac{x}{24}$

10) \_\_\_\_\_

Solve the compound inequality. Graph the solution set.

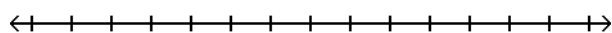
11)  $17 \leq 4t + 1 \leq 21$

11) \_\_\_\_\_

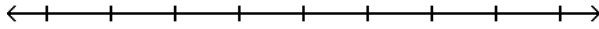


12)  $-32 \leq -5z + 3 \leq -17$

12) \_\_\_\_\_



13)  $-5x + 1 \geq 11$  or  $3x + 3 \geq -9$



13) \_\_\_\_\_

Solve the absolute value equation.

14)  $|6x + 7| = 9$

14) \_\_\_\_\_

15)  $\left| \frac{9x + 36}{4} \right| = 9$

15) \_\_\_\_\_

16)  $|5x - 7| = |x - 4|$

16) \_\_\_\_\_

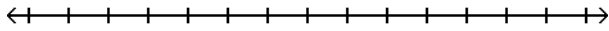
17)  $|7x + 2| = |-8 + 8x|$

17) \_\_\_\_\_

Solve the inequality. Graph the solution set.

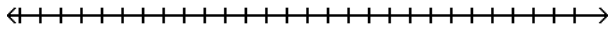
18)  $|8k + 1| \leq 4$

18) \_\_\_\_\_



19)  $|x - 3| + 6 \geq 11$

19) \_\_\_\_\_



Solve the absolute value equation.

20)  $|4x + 6| = 7$

20) \_\_\_\_\_

21)  $|8x + 4| + 8 = 17$

21) \_\_\_\_\_

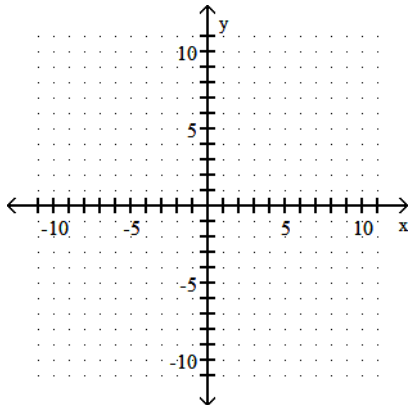
22)  $\left| \frac{7x - 2}{3} \right| = 4$

22) \_\_\_\_\_

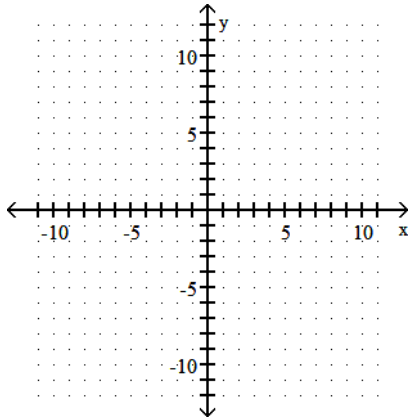
Graph the equation.

23)  $x + y = 6$

23) \_\_\_\_\_

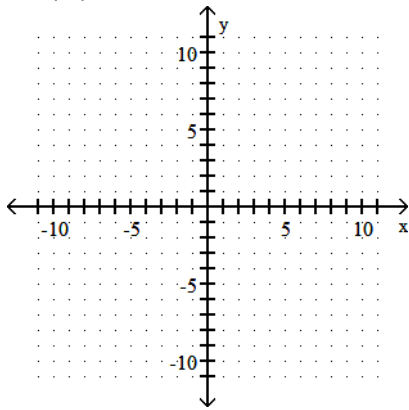


24)  $y = \frac{3}{4}x + 8$



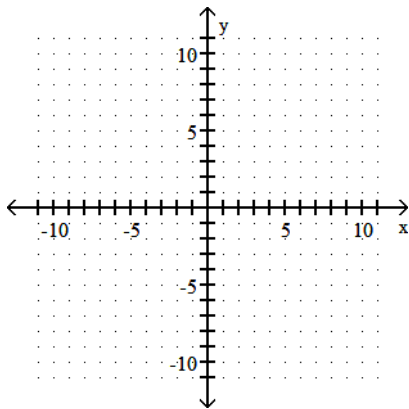
24) \_\_\_\_\_

25)  $y = |x| - 4$



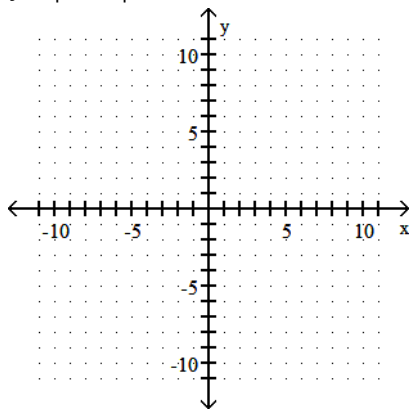
25) \_\_\_\_\_

26)  $y = x^2 - 2$



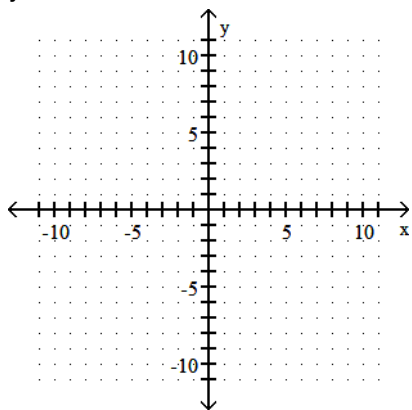
26) \_\_\_\_\_

27)  $y = |x - 3|$



27) \_\_\_\_\_

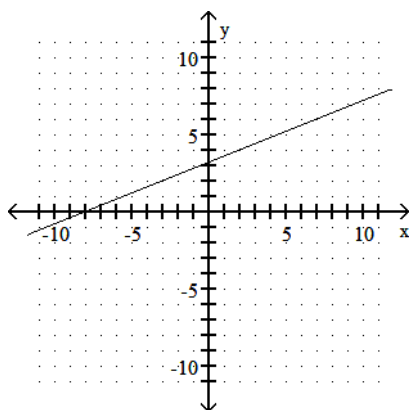
28)  $y = x^3 - 3$



28) \_\_\_\_\_

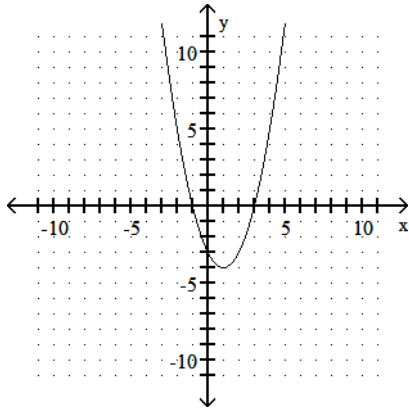
Find the domain and the range of the relation. Use the vertical line test to determine whether the graph is the graph of a function.

29)



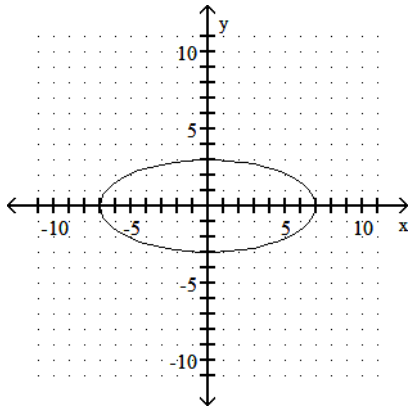
29) \_\_\_\_\_

30)



30) \_\_\_\_\_

31)



31) \_\_\_\_\_

Find the indicated value.

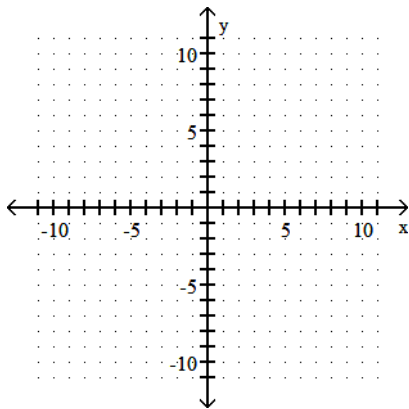
32) Find  $f(-4)$  when  $f(x) = 3x^2 - 5x + 6$ .

32) \_\_\_\_\_

Graph the function.

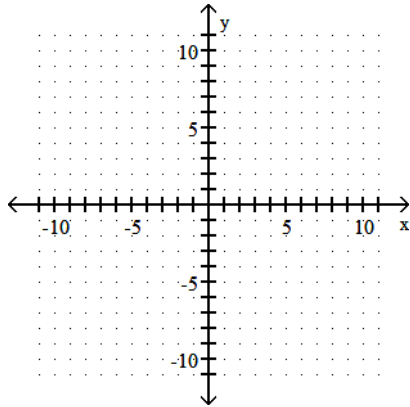
33)  $f(x) = -\frac{2}{3}x + 2$

33) \_\_\_\_\_



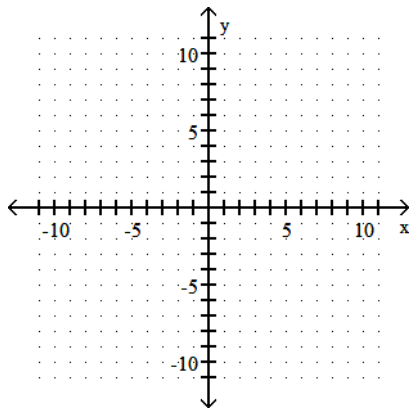
Graph the equation.

34)  $x + 3y = 3$



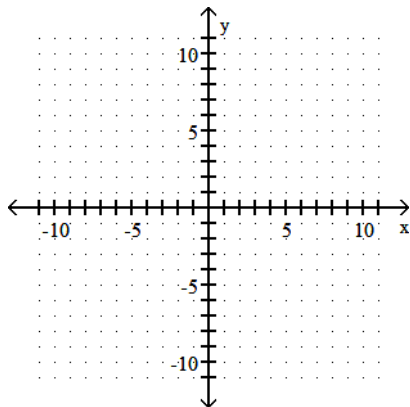
34) \_\_\_\_\_

35)  $-x + 3y = 6$



35) \_\_\_\_\_

36)  $-2x + y = 6$



36) \_\_\_\_\_

Find the slope of the line that goes through the given points.

37)  $(-6, -2), (3, -2)$

37) \_\_\_\_\_

38)  $(5, -8), (-4, 5)$

38) \_\_\_\_\_

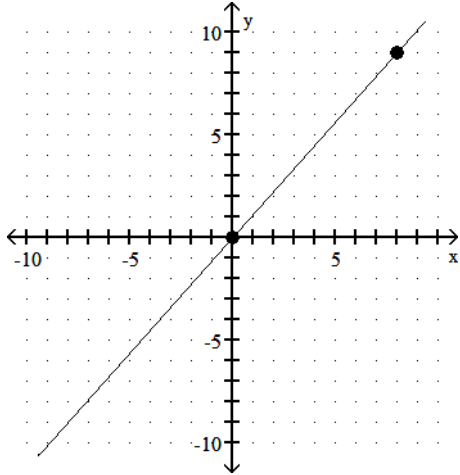
39)  $(-8, 7), (-8, 6)$

39) \_\_\_\_\_



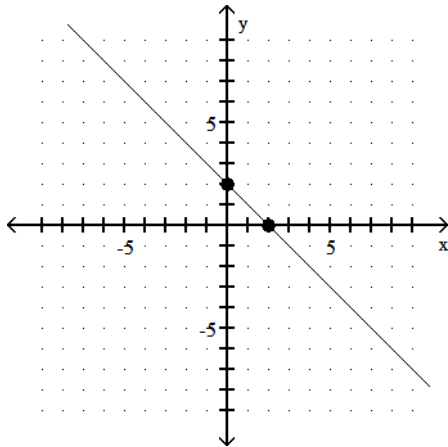
Use the points shown on the graph to determine the slope of the line.

40)



40) \_\_\_\_\_

41)



41) \_\_\_\_\_

Find the slope of the line.

42)  $3x + 5y = 28$

42) \_\_\_\_\_

43)  $-2y + 4x = 10$

43) \_\_\_\_\_

Find the slope and the y-intercept of the line.

44)  $3x + 5y = -16$

44) \_\_\_\_\_

Find the slope of the line.

45)  $x + 9 = 5$

45) \_\_\_\_\_

Determine whether the lines are parallel, perpendicular, or neither.

46)  $54x - 9y = 5$

$6x - y = 7$

46) \_\_\_\_\_

47)  $-3x - 6y = 2$

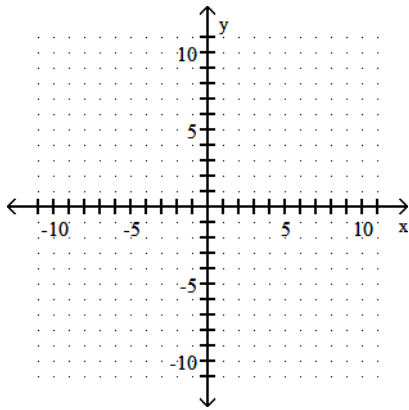
$2x - y = 6$

47) \_\_\_\_\_

Graph the equation.

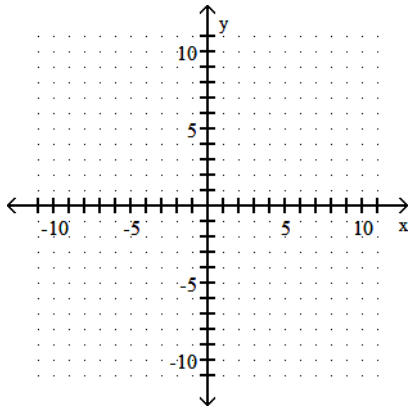
48)  $y = \frac{3}{4}x + 3$

48) \_\_\_\_\_



49)  $-5x + 7y = 35$

49) \_\_\_\_\_



Write an equation of the line with the given slope and containing the given point. Write the equation in the form  $y = mx + b$ .

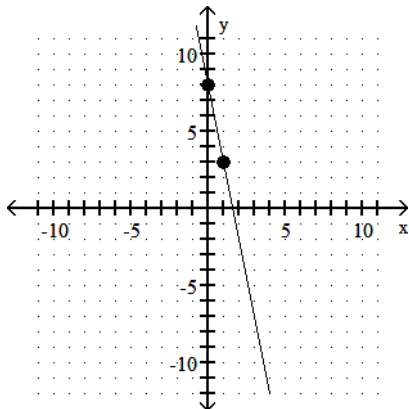
50) Slope -4; through  $(-2, 5)$

50) \_\_\_\_\_

Write an equation in standard form for the line graphed.

51)

51) \_\_\_\_\_



Find an equation of the line. Write the equation using function notation.

52) Through  $(1, 8)$  and  $(4, 14)$

52) \_\_\_\_\_

Find an equation of the line. Write the equation in standard form.

53) Slope  $-\frac{1}{8}$ ; y-intercept (0, 8)

53) \_\_\_\_\_

54) Horizontal; through (3, -9)

54) \_\_\_\_\_

Find an equation of the line. Write the equation using function notation.

55) Through (3, 5); parallel to  $f(x) = 5x - 7$

55) \_\_\_\_\_

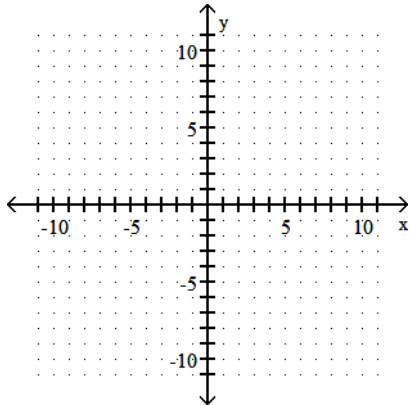
56) Through (-1, 4); perpendicular to  $f(x) = 4x - 2$

56) \_\_\_\_\_

Graph the inequality.

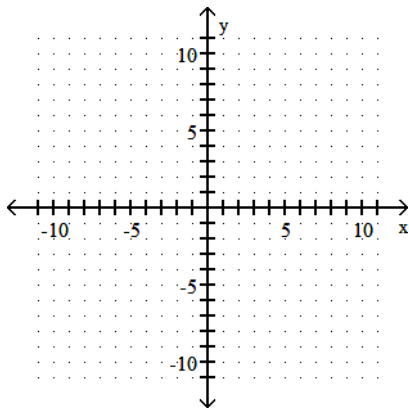
57)  $5x + y > -6$

57) \_\_\_\_\_



58)  $y \leq -9$

58) \_\_\_\_\_



Determine whether the ordered pair is a solution of the system of linear equations.

59) (2, -5),  $\begin{cases} x + y = -3 \\ x - y = 7 \end{cases}$

59) \_\_\_\_\_

Solve the system of equations.

60)  $\begin{cases} 2x - 1y = 21 \\ x = -3y \end{cases}$

60) \_\_\_\_\_

61) 
$$\begin{cases} 5x + 2y = 1 \\ 2x + 2y = 16 \end{cases}$$

61) \_\_\_\_\_

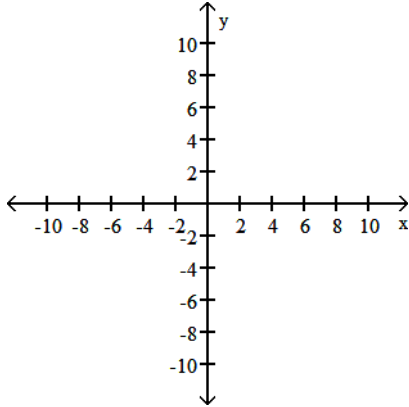
62) 
$$\begin{cases} 4x + y = 27 \\ 2x + 4y = 24 \end{cases}$$

62) \_\_\_\_\_

Graph the solutions to the system of linear inequalities.

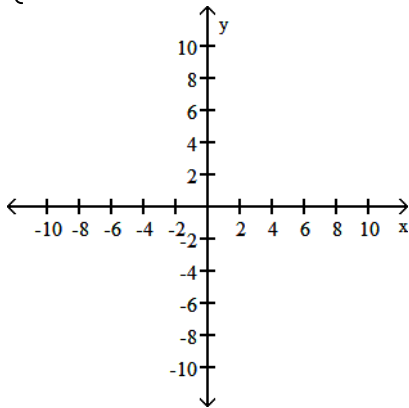
63) 
$$\begin{cases} y \geq x - 4 \\ y \leq -4 - x \end{cases}$$

63) \_\_\_\_\_



64) 
$$\begin{cases} y < -2x - 3 \\ y > x + 3 \end{cases}$$

64) \_\_\_\_\_



Simplify. Write the answer with positive exponents.

65)  $-4x^4y \cdot -6x^5y^3$

65) \_\_\_\_\_

66)  $\frac{x^9y^{12}}{x^4y^5}$

66) \_\_\_\_\_

67)  $\frac{x^{-7}y^{11}}{x^{-2}y^{-2}}$

67) \_\_\_\_\_

68)  $\frac{18x^{-1}y^4}{3xy^{-2}}$

68) \_\_\_\_\_

Perform the indicated operations.

69)  $(7x^8 + 7x^7 + 9x^6 - 4) + (4x^8 + 4x^7 + 4x^6 + 9)$

69) \_\_\_\_\_

70)  $(5x^2 + 6) - (-x^3 + 8x^2 + 10)$

70) \_\_\_\_\_

71) Subtract  $(4x^7 - 16x^6 - 18)$  from  $(7x^7 + 15x^6 + 6)$ .

71) \_\_\_\_\_

Multiply.

72)  $-9ax^5(-10ax^6 - 12x^2 - 2a)$

72) \_\_\_\_\_

73)  $(x - 1)(4x + 12)$

73) \_\_\_\_\_

74)  $(7x - 3)^2$

74) \_\_\_\_\_

Factor the polynomial completely.

75)  $18x^3 - 6x$

75) \_\_\_\_\_

76)  $x(y - 15) - 7(y - 15)$

76) \_\_\_\_\_

77)  $4x + 36 + xy + 9y$

77) \_\_\_\_\_

78)  $xy + 12x - 10y - 120$

78) \_\_\_\_\_

79)  $x^2 + 7x - 44$

79) \_\_\_\_\_

80)  $4x^2 - 28x + 48$

80) \_\_\_\_\_

81)  $15x^2 + 16x + 4$

81) \_\_\_\_\_

82)  $25x^2 - 9$

82) \_\_\_\_\_

Solve the equation.

83)  $(4x - 3)(x + 1) = 0$

83) \_\_\_\_\_

84)  $x^3 = 81x$

84) \_\_\_\_\_

85)  $4x^2 + 12x + 9 = 0$

85) \_\_\_\_\_

Find the domain of the rational function.

$$86) f(x) = \frac{8x}{-7 - x}$$

86) \_\_\_\_\_

$$87) f(x) = \frac{1 - 8x}{x^2 - 18x + 17}$$

87) \_\_\_\_\_

Simplify the rational expression.

$$88) \frac{5x - 15}{18 - 6x}$$

88) \_\_\_\_\_

$$89) \frac{7x^2 + 21x^3}{10x + 30x^2}$$

89) \_\_\_\_\_

Multiply or divide as indicated. Simplify completely.

$$90) \frac{35x + 35}{10x - 5} \cdot \frac{50x - 25}{7x^2 - 7}$$

90) \_\_\_\_\_

$$91) \frac{x^2 - 24x + 144}{10x - 120} \div \frac{2x - 24}{20}$$

91) \_\_\_\_\_

Perform the indicated operation. Simplify if possible.

$$92) \frac{x}{x - 3} + \frac{-5}{x - 3}$$

92) \_\_\_\_\_

$$93) \frac{3}{r} + \frac{7}{r + 3}$$

93) \_\_\_\_\_

$$94) \frac{b}{b^2 - 25} + \frac{5}{b + 5} - \frac{6}{b}$$

94) \_\_\_\_\_

Divide.

$$95) \frac{-40x^6 - 56x^5 - 64x^4}{-8x^5}$$

95) \_\_\_\_\_

$$96) (-10x^3 - 13x^2 - 10x - 3) \div (2x + 1)$$

96) \_\_\_\_\_

$$97) (36x^3 - 25x) \div (6x - 1)$$

97) \_\_\_\_\_

Solve the equation.

$$98) \frac{x}{6} + \frac{1}{3} = \frac{x - 4}{3}$$

98) \_\_\_\_\_

$$99) 1 + \frac{1}{x} = \frac{12}{x^2}$$

99) \_\_\_\_\_

Find the square root. Assume that all variables represent positive real numbers.

$$100) \sqrt{4x^6}$$

100) \_\_\_\_\_

Find the cube root.

$$101) \sqrt[3]{-729x^6}$$

101) \_\_\_\_\_

$$102) \sqrt[3]{-27x^{30}y^{36}}$$

102) \_\_\_\_\_

Find the root. Assume that all variables represent nonnegative real numbers.

$$103) -\sqrt[4]{256x^{12}y^8}$$

103) \_\_\_\_\_

104)

$$\sqrt[3]{\frac{216}{x^{24}}}$$

104) \_\_\_\_\_

Use radical notation to write the expression. Simplify if possible.

$$105) 81^{1/2}$$

105) \_\_\_\_\_

$$106) 27^{4/3}$$

106) \_\_\_\_\_

$$107) 7x^{3/4}$$

107) \_\_\_\_\_

Write with positive exponents. Simplify if possible.

$$108) 8^{-4/3}$$

108) \_\_\_\_\_

$$109) -64^{-4/3}$$

109) \_\_\_\_\_

Use the properties of exponents to simplify the expression. Write with positive exponents.

$$110) x^{5/8} \cdot x^{3/8}$$

110) \_\_\_\_\_

$$111) \frac{x^{4/3} \cdot x^{6/5}}{x^{-1/2}}$$

111) \_\_\_\_\_

$$112) \frac{y^{3/4}}{y^{1/4}}$$

112) \_\_\_\_\_

$$113) (b^3)^{2/3}$$

113) \_\_\_\_\_

Use the product rule to multiply. Assume all variables represent positive real numbers.

114)  $\sqrt{32} \cdot \sqrt{50}$

114) \_\_\_\_\_

115)  $\sqrt[3]{5} \cdot \sqrt[3]{25}$

115) \_\_\_\_\_

Use the quotient rule to divide and simplify.

116)  $\sqrt{\frac{3}{16}}$

116) \_\_\_\_\_

Simplify the radical expression. Assume that all variables represent positive real numbers.

117)  $\sqrt{500k^7q^8}$

117) \_\_\_\_\_

118)  $\sqrt[3]{64x^4y^5}$

118) \_\_\_\_\_

119)  $\sqrt[5]{1024x^3y^{22}}$

119) \_\_\_\_\_

Find the distance between the pair of points.

120) (5, -2) and (3, -6)

120) \_\_\_\_\_

Find the midpoint of the line segment whose endpoints are given.

121) (3, -8), (-3, 1)

121) \_\_\_\_\_

Add or subtract. Assume all variables represent positive real numbers.

122)  $-5\sqrt{7} - 4\sqrt{63}$

122) \_\_\_\_\_

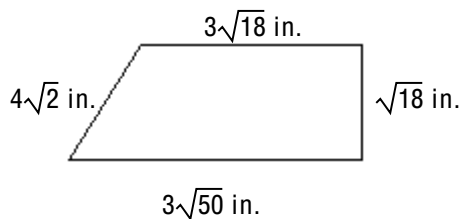
123)  $-4\sqrt{108} + 4\sqrt{75} - 7\sqrt{243}$

123) \_\_\_\_\_

Solve.

124) Find the perimeter of the trapezoid. Simplify.

124) \_\_\_\_\_



Multiply, and then simplify if possible. Assume all variables represent positive real numbers.

125)  $\sqrt{7}(\sqrt{35} + \sqrt{7})$

125) \_\_\_\_\_

126)  $(\sqrt{10} + \sqrt{7})(\sqrt{10} - \sqrt{7})$

126) \_\_\_\_\_

127)  $(\sqrt{5} + \sqrt{7})^2$

127) \_\_\_\_\_



Solve.

128)  $\sqrt{9x - 8} - 8 = 0$

128) \_\_\_\_\_

129)  $\sqrt{x - 2} = 5$

129) \_\_\_\_\_

Rationalize the denominator and simplify. Assume that all variables represent positive real numbers.

130)  $\sqrt{\frac{1}{7}}$

130) \_\_\_\_\_

131)  $\frac{35}{\sqrt{7x}}$

131) \_\_\_\_\_

132)  $\frac{3}{6 - \sqrt{10}}$

132) \_\_\_\_\_

133)  $\frac{\sqrt{6} - \sqrt{7}}{\sqrt{6} + \sqrt{7}}$

133) \_\_\_\_\_

Rationalize the numerator and simplify. Assume all variables represent positive real numbers.

134)  $\frac{3\sqrt{x}}{\sqrt{5y}}$

134) \_\_\_\_\_

Write in terms of i.

135)  $\sqrt{-144}$

135) \_\_\_\_\_

136)  $\sqrt{-270}$

136) \_\_\_\_\_

Multiply or divide.

137)  $\sqrt{-5} \cdot \sqrt{-6}$

137) \_\_\_\_\_

138)  $\frac{\sqrt{-40}}{\sqrt{-5}}$

138) \_\_\_\_\_

Perform the indicated operation. Write the result in the form  $a + bi$ .

139)  $(3 - 6i) + (7 + 2i)$

139) \_\_\_\_\_

140)  $(6 - 4i) - (6 - i)$

140) \_\_\_\_\_

141)  $4i(9 - 7i)$

141) \_\_\_\_\_

142)  $(8 + 9i)^2$

142) \_\_\_\_\_

Solve the equation by completing the square.

143)  $x^2 - 2x - 3 = 0$

143) \_\_\_\_\_

$$144) x^2 + 16x + 47 = 0$$

144) \_\_\_\_\_

Use the quadratic formula to solve the equation.

$$145) x^2 + 10x + 24 = 0$$

145) \_\_\_\_\_

Use the discriminant to determine the number and type of solutions of the equation.

$$146) x^2 - 6x + 5 = 0$$

146) \_\_\_\_\_

$$147) x^2 - 12x + 36 = 0$$

147) \_\_\_\_\_

$$148) x^2 - 3x + 8 = 0$$

148) \_\_\_\_\_

Write as an exponential equation.

$$149) \log_5 \frac{1}{25} = -2$$

149) \_\_\_\_\_

$$150) \log_7 \sqrt{7} = \frac{1}{2}$$

150) \_\_\_\_\_

Write as a logarithmic equation.

$$151) 5^2 = 25$$

151) \_\_\_\_\_

$$152) 5^{-3} = \frac{1}{125}$$

152) \_\_\_\_\_

Find the value of the logarithmic expression.

$$153) \log_3 27$$

153) \_\_\_\_\_

$$154) \log_{1/4} 4$$

154) \_\_\_\_\_

Simplify.

$$155) \log_7 7^{13}$$

155) \_\_\_\_\_

$$156) \log_9 9$$

156) \_\_\_\_\_

Find the value of the logarithmic expression.

$$157) \log_3 \frac{1}{27}$$

157) \_\_\_\_\_

Solve for x.

$$158) \log_5 25 = x$$

158) \_\_\_\_\_

$$159) \log_3 x = -2$$

159) \_\_\_\_\_

Express as the logarithm of a single expression. Assume that variables represent positive numbers.

160)  $\log_3 9 + \log_3 7$

160) \_\_\_\_\_

161)  $\log_8 2 + \log_8 (x^3 - 2) + \log_8 4$

161) \_\_\_\_\_

162)  $\log_7 8 - \log_7 10$

162) \_\_\_\_\_

Use the power property to rewrite the expression.

163)  $\log_2 x^8$

163) \_\_\_\_\_

164)  $\log_2 13^{-2}$

164) \_\_\_\_\_

165)  $\log_4 \sqrt[5]{y}$

165) \_\_\_\_\_

Answer Key

Testname: COLLEGE ALGEBRA

1) 1

2)  $-\frac{5}{12}$

3) -13

4) 1

5)  $\frac{108}{31}$

6) -3.6

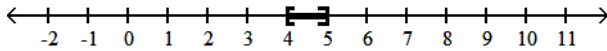
7)  $[53, \infty)$

8)  $(-24, \infty)$

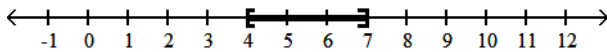
9)  $[3, \infty)$

10)  $[38, \infty)$

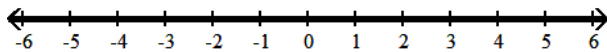
11)  $[4, 5]$



12)  $[4, 7]$



13)  $(-\infty, \infty)$



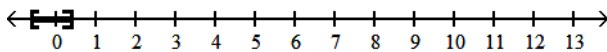
14)  $\frac{1}{3}, -\frac{8}{3}$

15) -8, 0

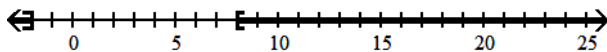
16)  $\frac{3}{4}, \frac{11}{6}$

17)  $10, \frac{2}{5}$

18)  $\left[-\frac{5}{8}, \frac{3}{8}\right]$



19)  $(-\infty, -2] \cup [8, \infty)$



20)  $\frac{1}{4}, -\frac{13}{4}$

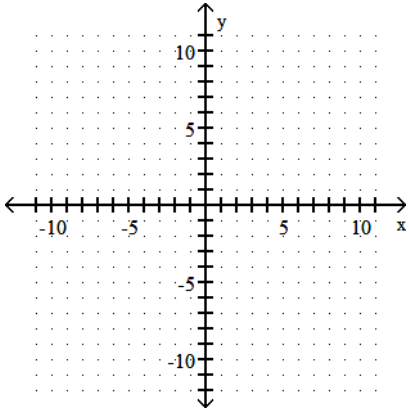
21)  $\frac{5}{8}, -\frac{13}{8}$

22)  $2, -\frac{10}{7}$

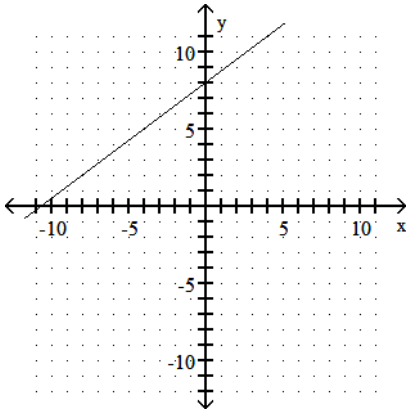
Answer Key

Testname: COLLEGE ALGEBRA

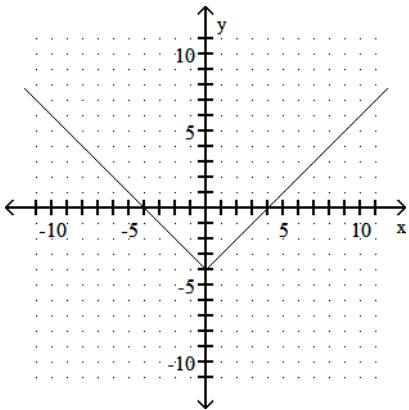
23)



24)



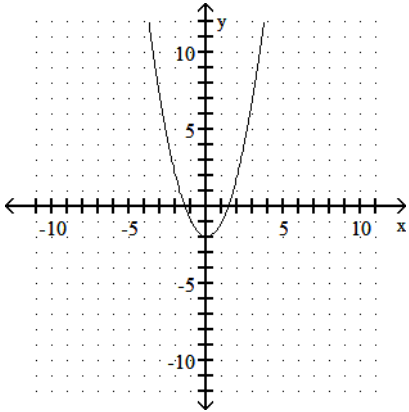
25)



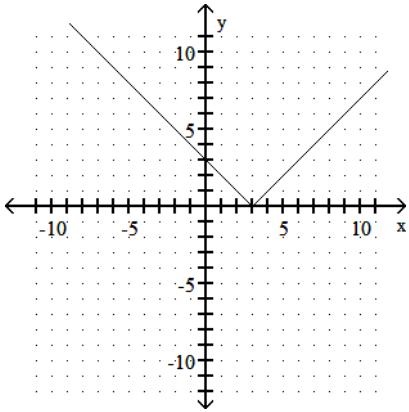
Answer Key

Testname: COLLEGE ALGEBRA

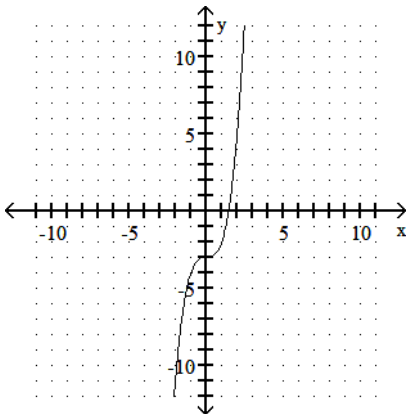
26)



27)



28)



29) domain:  $(-\infty, \infty)$

range:  $(-\infty, \infty)$

function

30) domain:  $(-\infty, \infty)$

range:  $[-4, \infty)$

function

31) domain:  $[-7, 7]$

range:  $[-3, 3]$

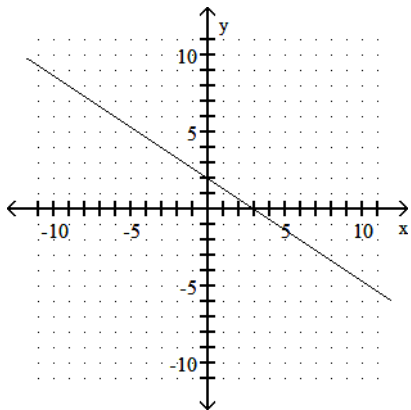
not a function

32) 74

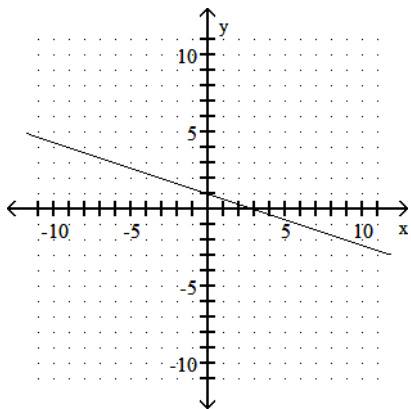
Answer Key

Testname: COLLEGE ALGEBRA

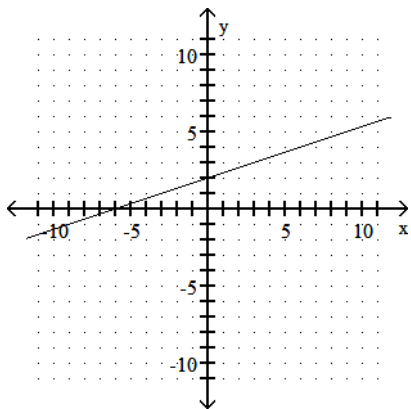
33)



34)



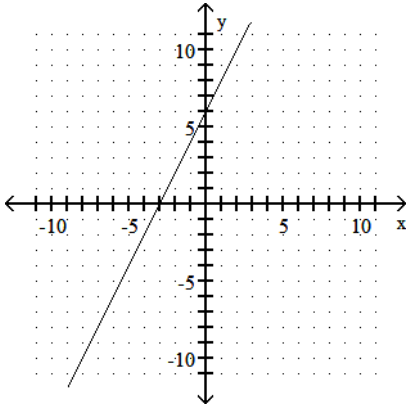
35)



Answer Key

Testname: COLLEGE ALGEBRA

36)



37) 0

38)  $-\frac{13}{9}$

39) undefined

40)  $\frac{9}{8}$

41) -1

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

43) 2

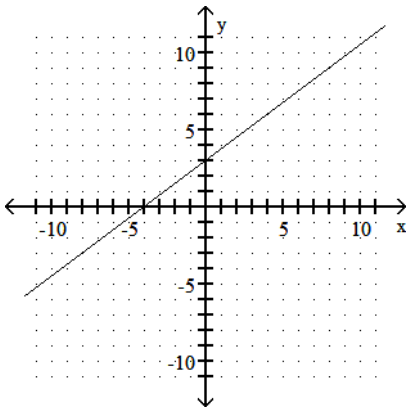
44)  $m = -\frac{3}{5}$ ;  $b = -\frac{16}{5}$

45) undefined

46) parallel

47) perpendicular

48)

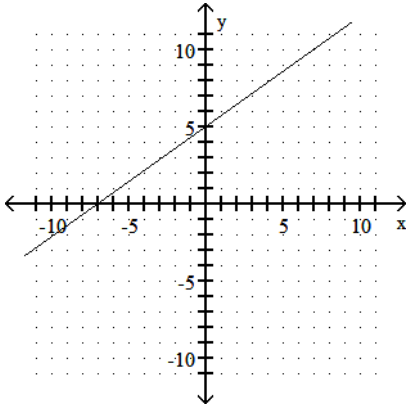




Answer Key

Testname: COLLEGE ALGEBRA

49)



50)  $y = -4x - 3$

51)  $5x + y = 8$

52)  $f(x) = 2x + 6$

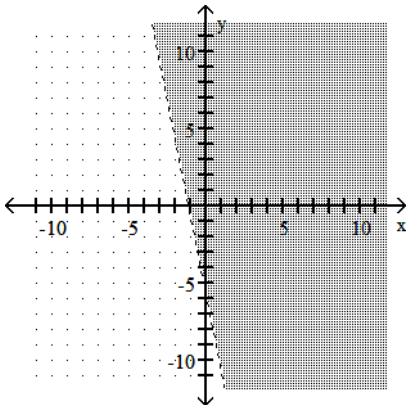
53)  $x + 8y = 64$

54)  $y = -9$

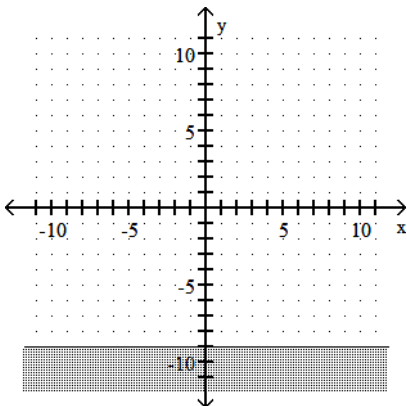
55)  $f(x) = 5x - 10$

56)  $f(x) = -\frac{1}{4}x + \frac{15}{4}$

57)



58)



59) Yes

60) (9, -3)

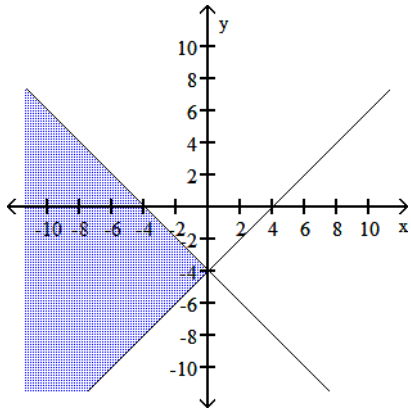
61) (-5, 13)

Answer Key

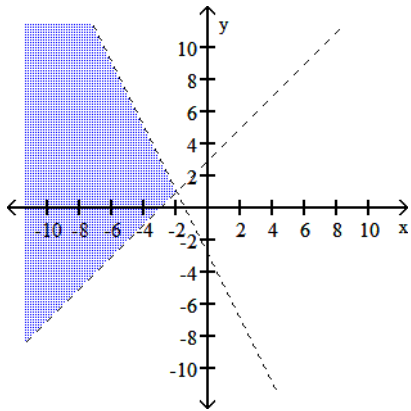
Testname: COLLEGE ALGEBRA

62) (6, 3)

63)



64)



65)  $24x^9y^4$

66)  $x^5y^7$

67)  $\frac{y^{13}}{x^5}$

68)  $\frac{6y^6}{x^2}$

69)  $11x^8 + 11x^7 + 13x^6 + 5$

70)  $x^3 - 3x^2 - 4$

71)  $3x^7 + 31x^6 + 24$

72)  $90a^2x^{11} + 108ax^7 + 18a^2x^5$

73)  $4x^2 + 8x - 12$

74)  $49x^2 - 42x + 9$

75)  $6x(3x^2 - 1)$

76)  $(y - 15)(x - 7)$

77)  $(x + 9)(4 + y)$

78)  $(y + 12)(x - 10)$

79)  $(x + 11)(x - 4)$

80)  $4(x - 3)(x - 4)$

81)  $(3x + 2)(5x + 2)$

Answer Key

Testname: COLLEGE ALGEBRA

82)  $(5x + 3)(5x - 3)$

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

84)  $-9, 0, 9$

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

86)  $\{x \mid x \text{ is a real number and } x \neq -7\}$

87)  $\{x \mid x \text{ is a real number and } x \neq 17, x \neq 1\}$

88)  $-\frac{5}{6}$

89)  $\frac{7x}{10}$

90)  $\frac{25}{x - 1}$

91)  $1$

92)  $\frac{x - 5}{x - 3}$

93)  $\frac{10r + 9}{r(r + 3)}$

94)  $\frac{-25(b - 6)}{b(b + 5)(b - 5)}$

95)  $5x + 7 + \frac{8}{x}$

96)  $-5x^2 - 4x - 3$

97)  $6x^2 + x - 4 - \frac{4}{6x - 1}$

98)  $10$

99)  $-4, 3$

100)  $2x^3$

101)  $-9x^2$

102)  $-3x^{10}y^{12}$

103)  $-4x^3y^2$

104)  $\frac{6}{x^8}$

105)  $9$

106)  $81$

107)  $7\sqrt[4]{x^3}$

108)  $\frac{1}{16}$

109)  $-\frac{1}{256}$

110)  $x$

111)  $x^{91/30}$

112)  $y^{1/2}$

Answer Key

Testname: COLLEGE ALGEBRA

113)  $b^2$

114) 40

115) 5

116)  $\frac{\sqrt{3}}{4}$

117)  $10k^3q^4\sqrt{5k}$

118)  $4xy\sqrt[3]{xy^2}$

119)  $4y^4\sqrt[5]{x^3y^2}$

120)  $2\sqrt{5}$  units

121)  $\left(0, -\frac{7}{2}\right)$

122)  $-17\sqrt{7}$

123)  $-67\sqrt{3}$

124)  $31\sqrt{2}$  in.

125)  $7\sqrt{5} + 7$

126) 3

127)  $12 + 2\sqrt{35}$

128) 8

129) 27

130)  $\frac{\sqrt{7}}{7}$

131)  $\frac{5\sqrt{7x}}{x}$

132)  $\frac{18 + 3\sqrt{10}}{26}$

133)  $2\sqrt{42} - 13$

134)  $\frac{3x}{\sqrt{5xy}}$

135)  $12i$

136)  $3i\sqrt{30}$

137)  $-\sqrt{30}$

138)  $2\sqrt{2}$

139)  $10 - 4i$

140)  $0 - 3i$

141)  $28 + 36i$

142)  $-17 + 144i$

143) 3, -1

144)  $-8 - \sqrt{17}, -8 + \sqrt{17}$

145) -4, -6

146) two real solutions

147) one real solution

148) two complex but not real solutions

149)  $5^{-2} = \frac{1}{25}$

Answer Key

Testname: COLLEGE ALGEBRA

$$150) 7^{\frac{1}{2}} = \sqrt{7}$$

$$151) \log_5 25 = 2$$

$$152) \log_5 \frac{1}{125} = -3$$

$$153) 3$$

$$154) -1$$

$$155) 13$$

$$156) 1$$

$$157) -3$$

$$158) 2$$

$$159) \frac{1}{9}$$

$$160) \log_3 63$$

$$161) \log_8 (8x^3 - 16)$$

$$162) \log_7 \frac{4}{5}$$

$$163) 8 \log_2 x$$

$$164) -2 \log_2 13$$

$$165) \frac{1}{5} \log_4 y$$



**ST. BRENDAN**  
**HIGH SCHOOL**

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**College Algebra  
(College Prep)  
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