

MAT 1033C  
Intermediate Algebra -- Martin-Gay  
Practice for the Final Exam

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

Use a calculator to approximate the square root to 3 decimal places. Check to see that the approximation is reasonable.

1)  $\sqrt{7}$  1) \_\_\_\_\_

2)  $\sqrt[3]{729}$  2) \_\_\_\_\_

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

3)  $\sqrt{\frac{196}{289}}$  3) \_\_\_\_\_

**Simplify. If needed, write answers with positive exponents only.**

4)  $\frac{6(2 + 1) - 6(1 + 1)}{6(4 - 2) - 2^3}$  4) \_\_\_\_\_

5)  $\left(\frac{16}{49}\right)^{-1/2}$  5) \_\_\_\_\_

6)  $16^{-3/2}$  6) \_\_\_\_\_

7)  $81^{5/4}$  7) \_\_\_\_\_

8)  $(-5x^3)^{-1}$  8) \_\_\_\_\_

**Simplify. If needed, write answers with positive exponents only.**

9)  $\sqrt{63}$  9) \_\_\_\_\_

10)  $\frac{\frac{40}{9x}}{\frac{5}{27x}}$  10) \_\_\_\_\_

11)

$$\frac{\frac{4}{x} - \frac{5}{2x}}{\frac{8}{6x} - \frac{1}{x}}$$

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

12)

$$\frac{\frac{5}{x} + \frac{7}{x^2}}{\frac{25}{x^2} - \frac{49}{x}}$$

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

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

13)  $\sqrt{54x^2y}$

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

14)  $\sqrt[5]{1024x^4y^{28}}$

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

**Simplify. If needed, write answers with positive exponents only.**

15)  $\frac{15x^{-5}y^6}{5xy^{-4}}$

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

16)  $\left(\frac{9z^{4/5}}{x^{-2/5}y^{6/7}}\right)^{1/2}$

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

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

17)  $\sqrt[3]{64m^3} \cdot \sqrt[3]{125m^3}$

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

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

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

**Factor completely.**

19)  $3xy^2 - 147x$

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

20)  $4y^3 - 32$

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

21)  $x^2y - 25y - 3x^2 + 75$

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

**Perform the indicated operation and simplify if possible.**

22)  $(9x^3 + 6x^2 - 4x + 2) - (3x^3 - 9x^2 + 2x - 1)$

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

23)  $(2x - 5)^2$

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

24)  $(8x + 3)(x^2 + 6x + 9)$

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

25)  $\frac{x^2 - 9}{x^2 + 3x} \div \frac{xy + 4x - 3y - 12}{5x - 20}$

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

**Multiply or divide as indicated. Simplify completely.**

26)  $\frac{x^2 + 13x + 36}{x^2 + 15x + 54} \div \frac{x^2 + 4x}{x^2 + 11x + 30}$

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

27)  $\frac{40x + 40}{12x - 8} \cdot \frac{96x - 64}{5x^2 - 5}$

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

28)  $\frac{2x - 2}{x} \cdot \frac{2x^2}{5x - 5}$

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

**Perform the indicated operation. Simplify if possible.**

29)  $\frac{3}{r} + \frac{8}{r - 5}$

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

30)  $\frac{m - 5}{m^2 - 7m + 6} + \frac{2m + 1}{m^2 - 5m + 4}$

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

**Perform the indicated operation and simplify if possible.**

31)  $\frac{5a}{a^2 - 5a + 4} - \frac{2}{a - 4}$

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

32)  $\frac{3}{y^2 - 3y + 2} + \frac{7}{y^2 - 1}$

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

33)  $12\sqrt[3]{2} - 4\sqrt[3]{128}$

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

34)  $(\sqrt{2x} + \sqrt{y})^2$

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

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

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

36)  $(36x^3 - 13x) \div (6x - 1)$  [Use long division.]

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

**Solve the equation for the specified variable.**

37)  $P = \frac{A}{1 + rt}$  for r

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

$$38) F = \frac{-GMm}{r^2} \text{ for } M$$

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

$$39) \frac{1}{p} + \frac{1}{q} = \frac{1}{f} \text{ for } f$$

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

**Solve the equation or inequality. Write inequality solutions in interval notation.**

$$40) -[4x + (6x + 3)] = 6 - (9x + 8)$$

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

$$41) |7m + 4| + 4 = 9$$

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

$$42) 2m(7m - 15) = 36$$

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

$$43) 0 \leq 2t - 4 \leq 8$$

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

$$44) |7k + 8| \geq 5$$

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

$$45) \frac{x^2 + 6}{x} + 3 = \frac{2(x + 3)}{x}$$

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

$$46) 5(x + 3) \leq 6(x - 8)$$

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

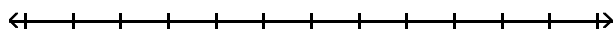
$$47) 7(6 - x) \geq 42$$

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

**Solve the compound inequality. Graph the solution set.**

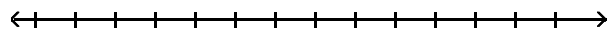
$$48) x \leq -2 \text{ and } x \geq -3$$

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



$$49) x \leq 2 \text{ or } x \geq 7$$

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



**Find the domain of the rational function.**

$$50) f(x) = \frac{3x - 5}{9}$$

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

$$51) f(x) = \frac{7x}{-9 + x}$$

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

$$52) f(x) = \frac{1 - 6x}{x^2 - 4x - 32}$$

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

**Solve the equation.**

$$53) \frac{19}{x} = 4 - \frac{1}{x}$$

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

$$54) \frac{9}{x-1} + \frac{x}{x+1} = \frac{17}{x^2-1}$$

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

$$55) 32x^{-2} - 12x^{-1} + 1 = 0$$

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

$$56) (x+5)^2 = 11$$

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

$$57) 6x^2 + 7x + 1 = 0$$

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

$$58) 3x^2 + 12x = -2$$

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

**Solve.**

$$59) \sqrt{x+1} = 4$$

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

$$60) x = \sqrt{2x+2} + 3$$

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

**Solve.**

$$61) \sqrt{3x-1} = 4$$

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

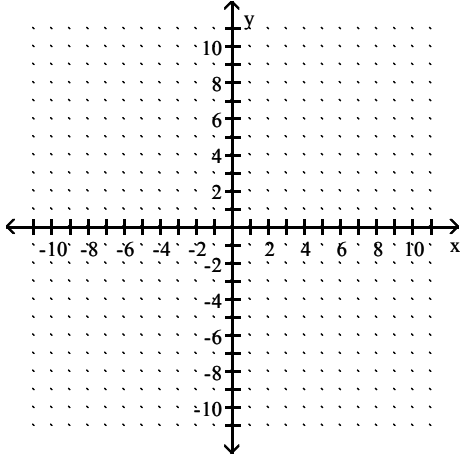
$$62) \sqrt[3]{2x+5} + 2 = 0$$

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

Graph.

63)  $4x - 2y = 10$

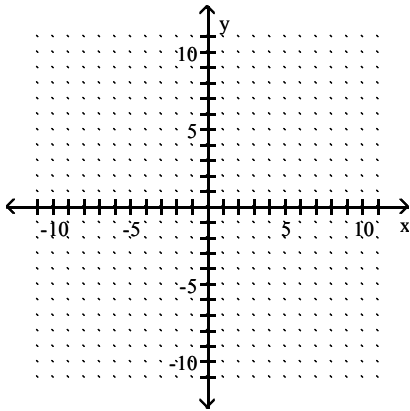
63) \_\_\_\_\_



Graph the line.

64)  $f(x) = \frac{4}{5}x - 4$

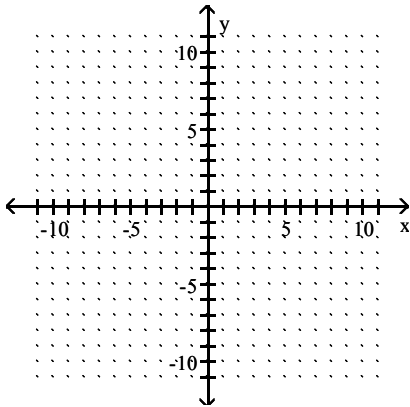
64) \_\_\_\_\_



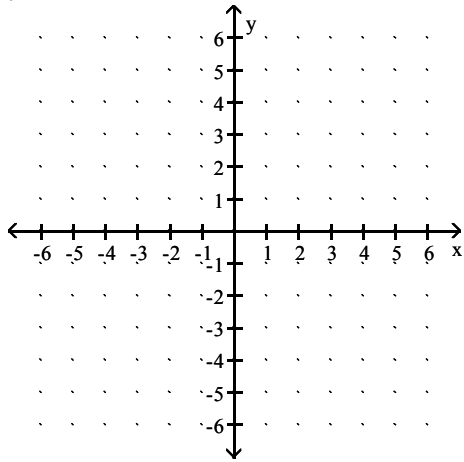
Graph.

65)  $6x + y > 6$

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



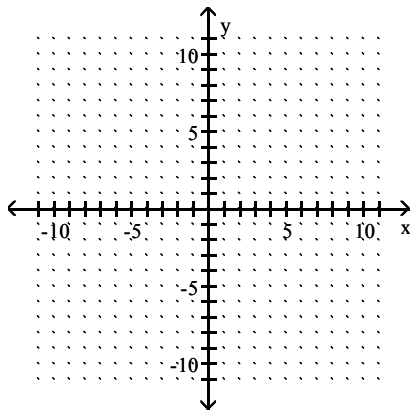
66)  $y + 2 = 0$



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

Graph the equation.

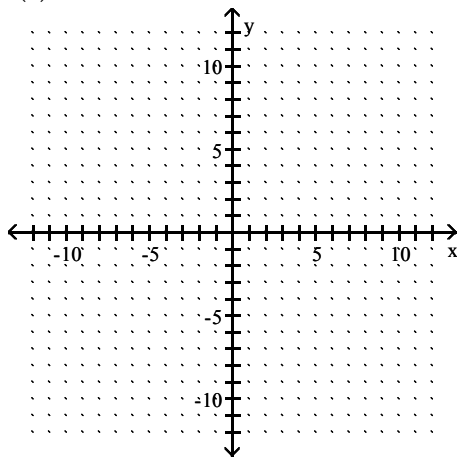
67)  $y = 5$



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

Graph.

68)  $f(x) = |x - 4| - 1$ . Also, find the domain and range of this function.

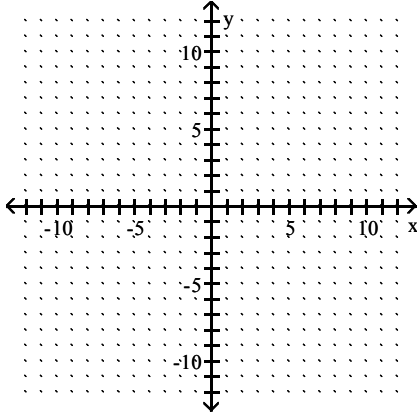


68) \_\_\_\_\_

Sketch the graph of the function.

69)  $f(x) = 4|x - 3| - 5$

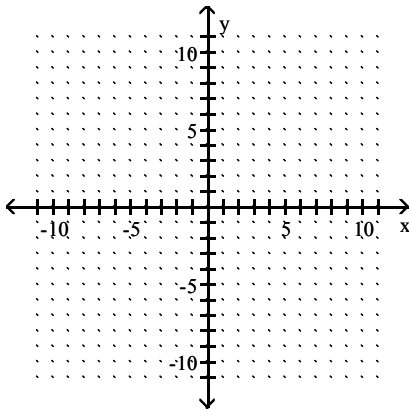
69) \_\_\_\_\_



Identify the domain and then graph the function.

70)  $f(x) = \sqrt{x} + 3$

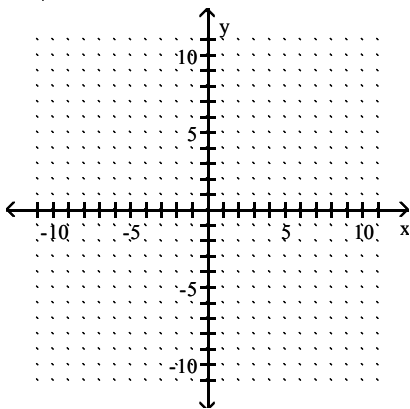
70) \_\_\_\_\_



71)  $f(x) = \sqrt{x + 2}$ ; use the following table.

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

x	f(x)
-2	
-1	
2	

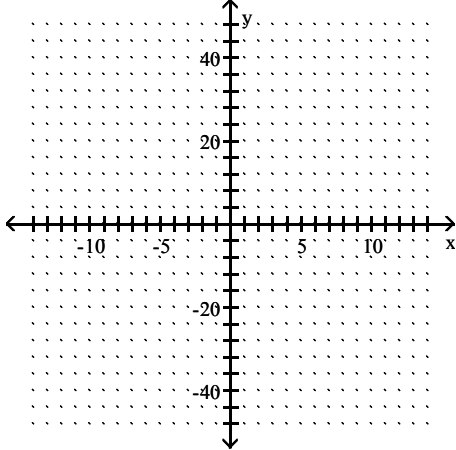




Graph.

72)  $f(x) = x^2 + 4x + 4$ . Label the vertex and any intercepts.

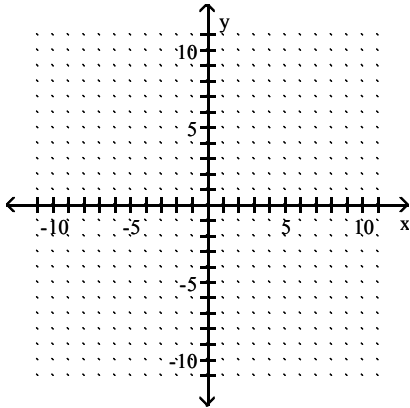
72) \_\_\_\_\_



Sketch the graph of the quadratic function. Give the vertex and axis of symmetry.

73)  $f(x) = -x^2 - 3$

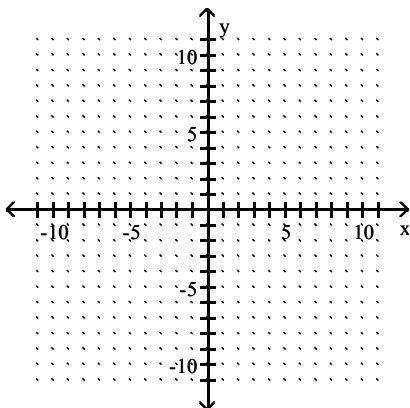
73) \_\_\_\_\_



Graph the function. Find the vertex, y-intercept, and x-intercepts (if any).

74)  $F(x) = 2x^2 - 4x + 5$

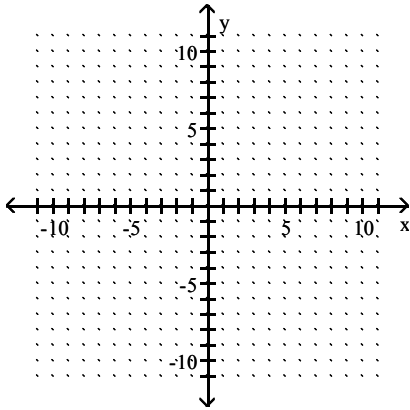
74) \_\_\_\_\_



Sketch the graph of the quadratic function. Give the vertex and axis of symmetry.

75)  $f(x) = \frac{1}{3}(x + 4)^2 + 1$

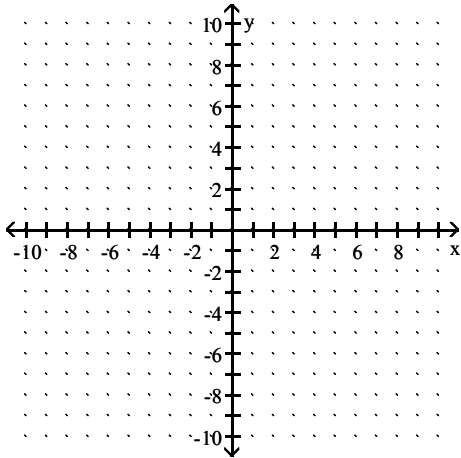
75) \_\_\_\_\_



Graph.

76)  $f(x) = \begin{cases} -\frac{1}{2}x & \text{if } x < 0 \\ 3x - 7 & \text{if } x \geq 0 \end{cases}$ . Also, find the domain and range of this function.

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



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

77) Through  $(9, -25)$  and  $(8, -22)$

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

78) Through  $(-2, -4)$ ; perpendicular to  $8x + 3y = -50$

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

Find the distance between the points.

79)  $(-3, -2)$  and  $(6, 4)$ .

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

80)  $(-6, -7)$  and  $(3, -1)$

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

81)  $(2.1, -5.7)$  and  $(-7.9, -5.6)$

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

Approximate the distance to two decimal places.

82)  $(-5, -7), (9, 6)$

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

**Find the midpoint of the line segment.**

83) endpoints are  $(6, 1)$  and  $(-9, 8)$ .

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

84)  $(0, -6), (-2, 9)$

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

85)  $\left(\frac{1}{2}, \frac{7}{4}\right), \left(-1, -\frac{5}{4}\right)$

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

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

86)  $\sqrt{\frac{121}{x}}$

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

87)  $\frac{\sqrt{x}}{11 - \sqrt{x}}$

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

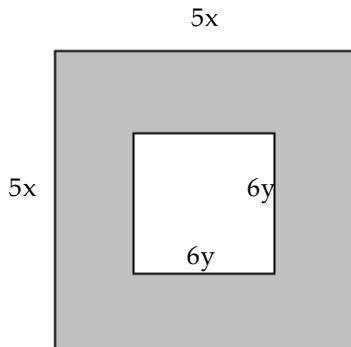
**Solve.**

88) The three most prominent buildings in a city, Washington Center, Lincoln Galleria, and Jefferson Square Tower, have a total height of 1800 feet. Find the height of each building if Jefferson Square Tower is three times as tall as Lincoln Galleria and Washington Center is 200 feet taller than Lincoln Galleria.

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

89) Write the area of the shaded region as a factored polynomial.

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



90) The product of two more than a number and twice the reciprocal of the number is  $\frac{11}{5}$ .

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

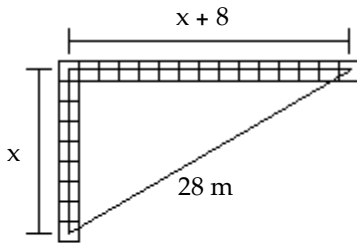
Find the number.

91) Suppose that  $x$  is inversely proportional  $v$ . If  $x = 12$  when  $v = 6$ , find  $x$  when  $v = 24$ .

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

92) Given the diagram shown, approximate to the nearest meter, how many meters of walking distance a person saves by cutting across the lawn instead of walking on the sidewalk.

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



93) Consider the quadratic model  $h(t) = -16t^2 + 40t + 50$  for the height (in feet),  $h$ , of an object  $t$  seconds after the object has been projected straight up into the air. Find the maximum height attained by the object. How much time does it take to fall back to the ground? Assume that it takes the same time for going up and coming down.

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

94) Shelly can cut a lawn with a riding mower in 4 hours less time than it takes William to cut the lawn with a push mower. If they can cut the lawn in 4 hours working together find how long to the nearest tenth of an hour it takes for William to cut the lawn alone.

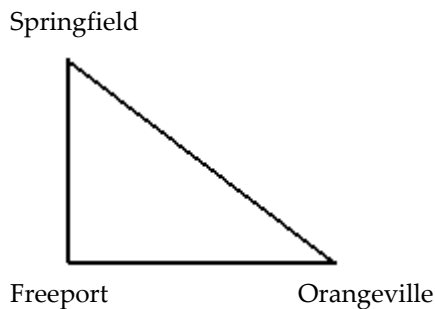
94) \_\_\_\_\_

95) Two different gasohol mixtures are available. One contains 5% alcohol and the other 12% alcohol. How much of each should be mixed to obtain 1250 gal of gasohol containing 10% alcohol?

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

96) Because of the increase in traffic between Springfield and Orangeville, a new road was built to connect the two towns. The old road goes south  $x$  miles from Springfield to Freeport and then goes east  $x + 3$  miles from Freeport to Orangeville. The new road is 7 miles long and goes straight from Springfield to Orangeville. Find the number of miles that a person saves by driving the new road over the old one.

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



**Write in terms of  $i$ .**

97)  $\sqrt{-16}$

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

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

98)  $-\sqrt{-260}$

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

**Write in terms of i.**

99)  $\sqrt{-188}$

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

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

100)  $(3 - 7i) - (3 - i)$

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

101)  $(3 + 9i) - (-9 + i)$

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

102)  $(9 + 8i) - (-7 + i)$

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

103)  $(5i)(2i)$

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

104)  $(\sqrt{6} + 2i)(\sqrt{6} - 2i)$

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

105)  $(5 - 9i)^2$

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

106)  $\frac{7}{2i}$

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

107)  $\frac{8 + 9i}{5 - 3i}$

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

108)  $\frac{2 + 6i}{4 + 3i}$

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

**Find the power of i.**

109)  $i^{57}$

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

110)  $(2i)^4$

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

111)  $(-2i)^7$

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

**Provide an appropriate response.**

112) Expand:  $(5x - 4y)^3$

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

**Solve the system.**

113) 
$$\begin{cases} 2x + 4y = -16 \\ 12x + 2y = 80 \end{cases}$$

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

114) 
$$\begin{cases} 2x - 7y = -12 \\ -7x - 4y = -15 \end{cases}$$

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

115) 
$$\begin{cases} y = -5x \\ -5x + y = -10 \end{cases}$$

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

116) 
$$\begin{cases} -x + 5y = -9 \\ 9x - 45y = 3 \end{cases}$$

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

117) 
$$\begin{cases} \frac{3}{10}x + \frac{3}{5}y = \frac{12}{5} \\ 3x + 2y = 36 \end{cases}$$

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

**Solve.**

118) One number is 3 less than a second number. Twice the second number is 48 more than 5 times the first. Find the two numbers.

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

119) The manager of a bulk foods establishment sells a trail mix for \$7 per pound and premium cashews for \$15 per pound. The manager wishes to make a 480-pound trail mix-cashew mixture that will sell for \$8 per pound. How many pounds of each should be used?

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

**Find the domain and range.**

120)  $\{(-8, -2), (-4, 1), (11, -5), (-6, -1), (12, 4)\}$

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

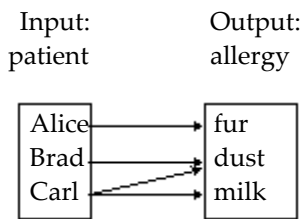
**Find the domain and the range of the relation. Then determine whether the relation is a function.**

121)  $\{(-2, -7), (2, 5), (5, -3), (7, -1)\}$

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

122)

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



**Evaluate.**

123) If  $f(x) = \sqrt{2x + 1}$ , find the value of  $f(1)$ .

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

**Decide whether the relation defines a function.**

124)  $x = y^2$

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

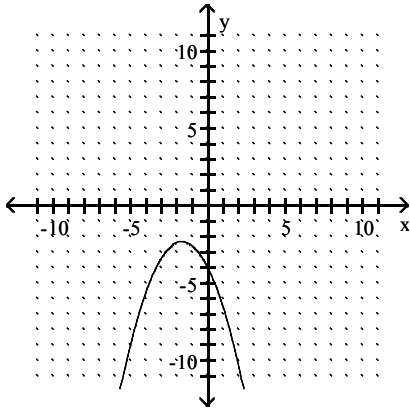
125)  $y = \frac{14}{13 - x}$

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

Use the vertical line test to determine whether the graph is the graph of a function.

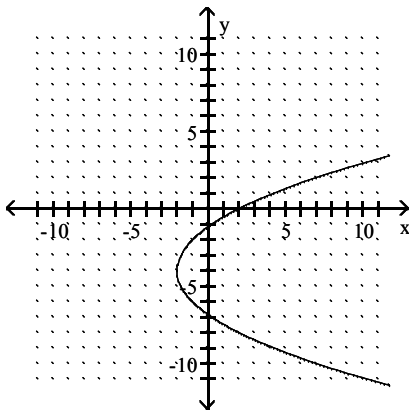
126)

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



127)

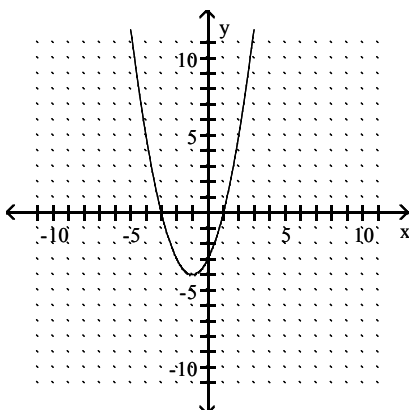
127) \_\_\_\_\_



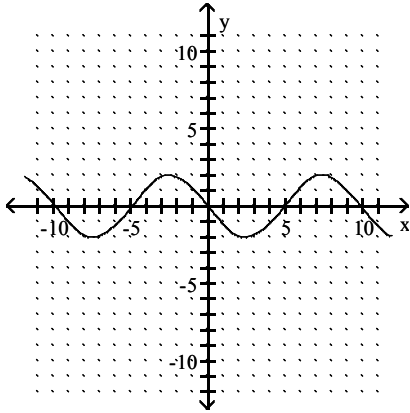
Find the domain and the range of the relation. Use the vertical line test to determine whether the graph is the graph of a function.

128)

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



129)



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

**Evaluate.**

130) If  $f(x) = \sqrt[3]{x + 120}$ , find the value of  $f(5)$ .

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

131) Find  $f(3)$  when  $f(x) = 5x^2 + 2x - 7$

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

132) Find  $f(-6)$  when  $f(x) = -4.8(x + 5.3)$

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

133) Find  $f(12)$  when  $f(x) = 6$

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

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

134) Slope 4; through  $(-2, -7)$

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

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

135) Through  $(10, -52)$  and  $(2, -4)$

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

136) Through  $(5, 1)$ ; parallel to  $f(x) = 5x - 3$

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

137) Through  $(-8, 4)$ ; perpendicular to  $5x + 7y = 66$

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

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

138) Vertical; through  $(9, 7)$

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

139) Horizontal; through  $(-8, 5)$

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

140) Undefined slope; through  $(0, -2)$

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



## Answer Key

### Testname: PRACTICE FOR THE FINAL EXAM

1) 2.646

2) 9

3)  $\frac{14}{17}$

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

5)  $\frac{7}{4}$

6)  $\frac{1}{64}$

7) 243

8)  $-\frac{1}{5x^3}$

9)  $3\sqrt{7}$

10) 24

11)  $\frac{9}{2}$

12)  $\frac{5x + 7}{25 - 49x}$

13)  $3x\sqrt{6y}$

14)  $4y^5\sqrt[5]{x^4y^3}$

15)  $\frac{3y^{10}}{x^6}$

16)  $\frac{3z^{2/5}x^{1/5}}{y^{3/7}}$

17)  $20m^2$

18) 40

19)  $3x(y + 7)(y - 7)$

20)  $4(y - 2)(y^2 + 2y + 4)$

21)  $(x + 5)(x - 5)(y - 3)$

22)  $6x^3 + 15x^2 - 6x + 3$

23)  $4x^2 - 20x + 25$

24)  $8x^3 + 51x^2 + 90x + 27$

25)  $\frac{5(x - 4)}{x(y + 4)}$

26)  $\frac{x + 5}{x}$

27)  $\frac{64}{x - 1}$

28)  $\frac{4x}{5}$

29)  $\frac{11r - 15}{r(r - 5)}$

# Answer Key

## Testname: PRACTICE FOR THE FINAL EXAM

$$30) \frac{3m^2 - 20m + 14}{(m-1)(m-6)(m-4)}$$

$$31) \frac{3a+2}{(a-4)(a-1)}$$

$$32) \frac{10y-11}{(y-1)(y+1)(y-2)}$$

$$33) -4\sqrt[3]{2}$$

$$34) 2x + 2\sqrt{2xy} + y$$

$$35) 3$$

$$36) 6x^2 + x - 2 - \frac{2}{6x-1}$$

$$37) r = \frac{A-P}{Pt}$$

$$38) M = \frac{-Fr^2}{Gm}$$

$$39) f = \frac{pq}{p+q}$$

$$40) -1$$

$$41) \frac{1}{7}, -\frac{9}{7}$$

$$42) 3, -\frac{6}{7}$$

$$43) [2, 6]$$

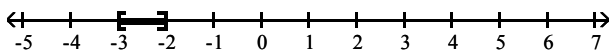
$$44) \left(-\infty, -\frac{13}{7}\right] \cup \left[-\frac{3}{7}, \infty\right)$$

$$45) -1$$

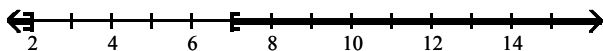
$$46) [63, \infty)$$

$$47) (-\infty, 0]$$

$$48) [-3, -2]$$



$$49) (-\infty, 2] \cup [7, \infty)$$



$$50) \{x \mid x \text{ is a real number}\}$$

$$51) \{x \mid x \text{ is a real number and } x \neq 9\}$$

$$52) \{x \mid x \text{ is a real number and } x \neq 8, x \neq -4\}$$

$$53) 5$$

$$54) -4 - 2\sqrt{6}, -4 + 2\sqrt{6}$$

$$55) 4, 8$$

$$56) -5 - \sqrt{11}, -5 + \sqrt{11}$$

$$57) -\frac{1}{6}, -1$$

Answer Key

Testname: PRACTICE FOR THE FINAL EXAM

58)  $\frac{-6 \pm \sqrt{30}}{3}$

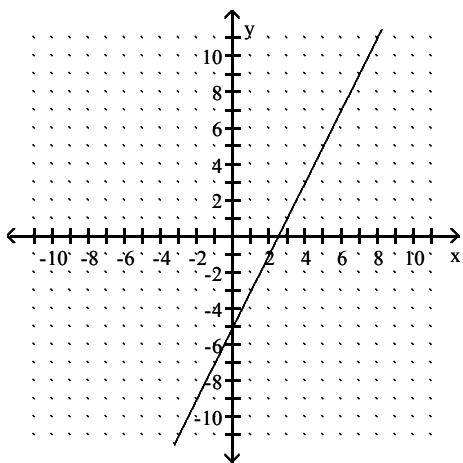
59) 15

60) 7

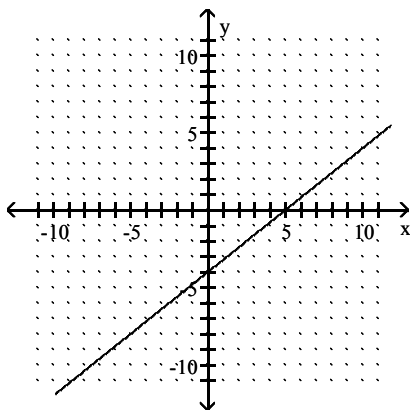
61)  $\frac{17}{3}$

62)  $-\frac{13}{2}$

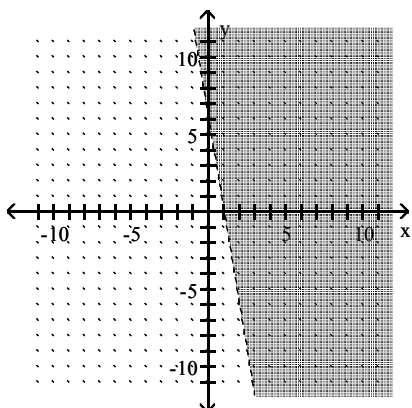
63)



64)



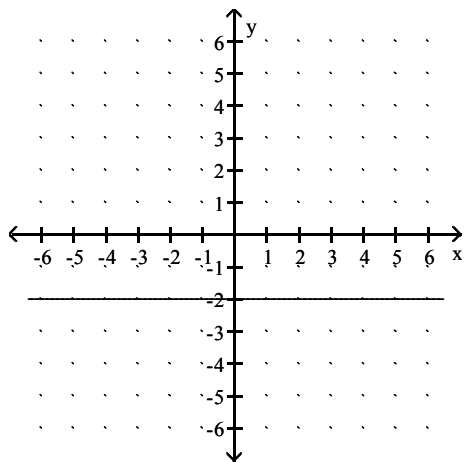
65)



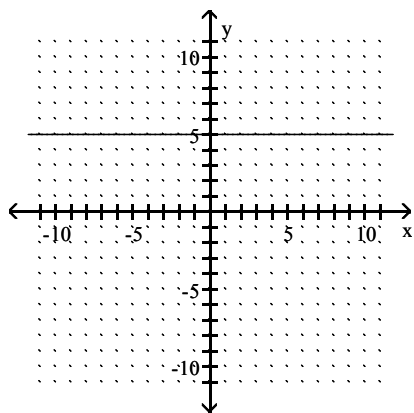
Answer Key

Testname: PRACTICE FOR THE FINAL EXAM

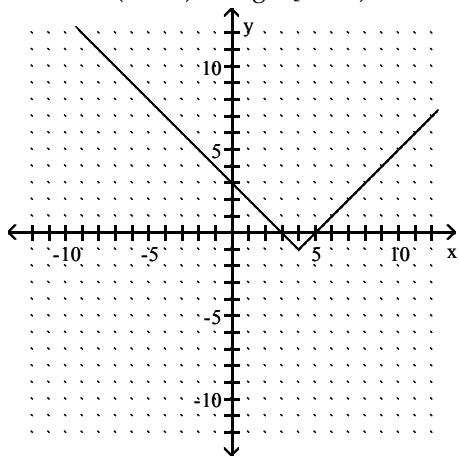
66)



67)



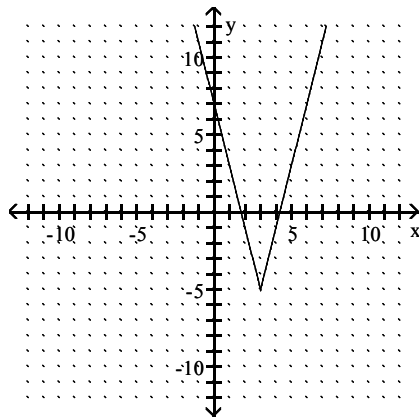
68) Domain:  $(-\infty, \infty)$ ; Range:  $[-1, \infty)$



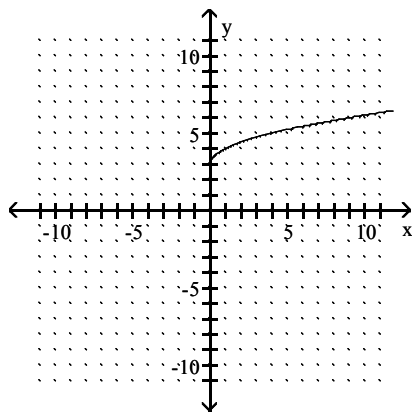
Answer Key

Testname: PRACTICE FOR THE FINAL EXAM

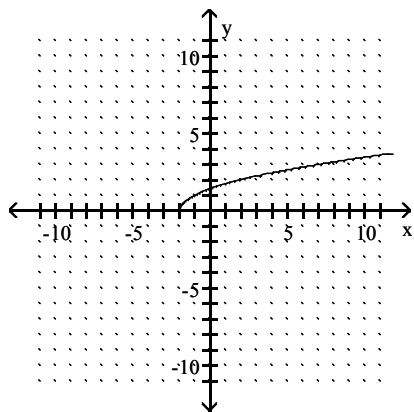
69)



70)  $[0, \infty)$



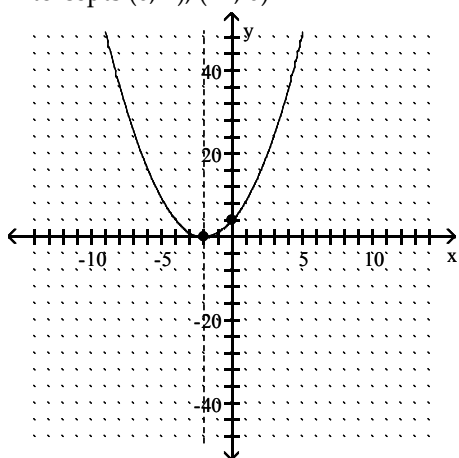
71)  $[-2, \infty)$



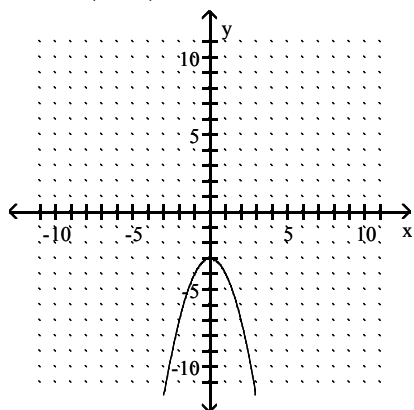
# Answer Key

## Testname: PRACTICE FOR THE FINAL EXAM

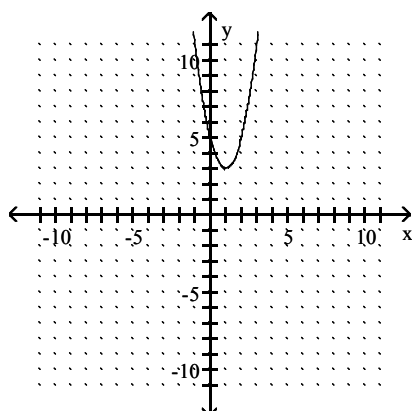
- 72) vertex  $(-2, 0)$   
intercepts  $(0, 4), (-2, 0)$



- 73) vertex  $(0, -3)$ ; axis  $x = 0$



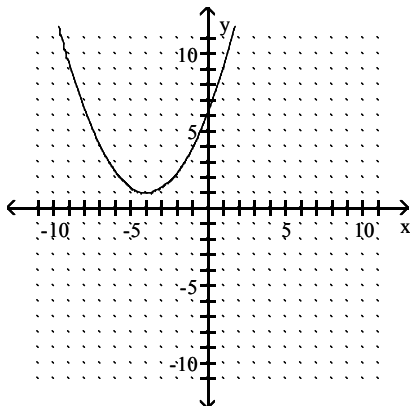
- 74) vertex:  $(1, 3)$   
x-intercept: none, y-intercept:  $(0, 5)$



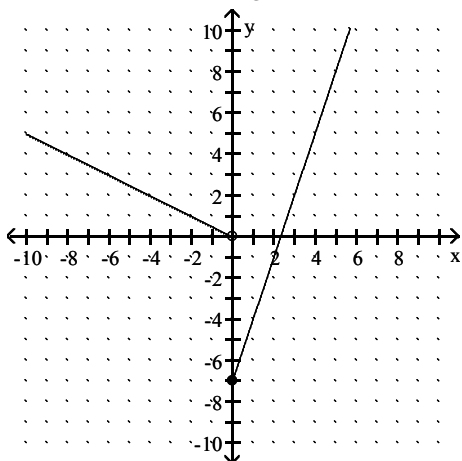
# Answer Key

## Testname: PRACTICE FOR THE FINAL EXAM

75) vertex  $(-4, 1)$ ; axis  $x = -4$



76) Domain:  $(-\infty, \infty)$ ; Range:  $(-7, \infty)$



77)  $f(x) = -3x + 2$

78)  $f(x) = \frac{3}{8}x - \frac{13}{4}$

79)  $3\sqrt{13}$  units

80)  $3\sqrt{13}$  units

81) 10 units

82)  $\left(2, -\frac{1}{2}\right)$

83)  $\left(-\frac{3}{2}, \frac{9}{2}\right)$

84)  $\left(-1, \frac{3}{2}\right)$

85)  $\left(-\frac{1}{4}, \frac{1}{4}\right)$

86)  $\frac{11\sqrt{x}}{x}$

87)  $\frac{11\sqrt{x} + x}{121 - x}$

## Answer Key

### Testname: PRACTICE FOR THE FINAL EXAM

- 88) Washington Center: 520 feet  
Lincoln Galleria: 320 feet  
Jefferson Square Tower: 960 feet
- 89)  $(5x + 6y)(5x - 6y)$
- 90) 20
- 91) 3
- 92) 11 m
- 93) maximum height = 75 ft; time to reach ground = 2.5 seconds
- 94) 10.5 hr
- 95) 357 gal of 5%, 893 gal of 12%
- 96)  $\sqrt{89} - 7$  miles
- 97)  $4i$
- 98)  $-2i\sqrt{65}$
- 99)  $2i\sqrt{47}$
- 100)  $-6i$
- 101)  $12 + 8i$
- 102)  $16 + 7i$
- 103)  $-10$
- 104) 10
- 105)  $-56 - 90i$
- 106)  $-\frac{7}{2}i$
- 107)  $\frac{13}{34} + \frac{69}{34}i$
- 108)  $\frac{26}{25} + \frac{18}{25}i$
- 109)  $i$
- 110) 16
- 111)  $128i$
- 112)  $125x^3 - 300x^2y + 240xy^2 - 64y^3$
- 113) (8, -8)
- 114) (1, 2)
- 115) (1, -5)
- 116)  $\emptyset$
- 117) (14, -3)
- 118) -14 and -11
- 119) 420 pounds of trail mix  
60 pounds of cashews
- 120) domain =  $\{-8, -4, 11, -6, 12\}$ ; range =  $\{1, -5, -1, 4, -2\}$
- 121) domain:  $\{-2, 2, 5, 7\}$   
range:  $\{-7, 5, -3, -1\}$   
function
- 122) domain: {Alice, Brad, Carl}  
range: {fur, dust, milk}  
not a function
- 123)  $\sqrt{3}$
- 124) not a function
- 125) function



## Answer Key

### Testname: PRACTICE FOR THE FINAL EXAM

126) function

127) not a function

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

range:  $[-4, \infty)$

function

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

range:  $[-2, 2]$

function

130) 5

131) 44

132) 3.36

133) 6

134)  $y = 4x + 1$

135)  $f(x) = -6x + 8$

136)  $f(x) = 5x - 24$

137)  $f(x) = \frac{7}{5}x + \frac{76}{5}$

138)  $x = 9$

139)  $y = 5$

140)  $x = 0$