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MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Solve.

1) $\frac{x}{5} = \frac{x}{6} + \frac{2}{5}$ 1) _____
A) 12 B) $-\frac{2}{5}$ C) 0 D) $\frac{1}{12}$

Objective: (4.8) Solve Equations Containing Fractions

Solve the equation.

2) $1.1x + 4.3 = 0.7x + 1.14$ 2) _____
A) -7.9 B) -7.8 C) 0.127 D) -7.11

Objective: (5.6) Solve Equations Containing Decimals

3) $8(3x - 0.2) = 7x - 1.6$ 3) _____
A) 0 B) 0.188 C) -0.082 D) 17

Objective: (5.6) Solve Equations Containing Decimals

Find the total amount in the compound interest account.

4) \$18,000 at 5% compounded annually for 5 years 4) _____
A) \$22,973.07 B) \$21,879.11 C) \$21,600.00 D) \$22,500.00

Objective: (6.7) Calculate Compound Interest

Solve.

5) You have taken up gardening for relaxation and have decided to fence in your new rectangular shaped masterpiece. The length of the garden is 12 meters and 46 meters of fencing is required to completely enclose it. What is the width of the garden? 5) _____
A) 11 m B) 552 m C) 3.83 m D) 22 m

Objective: (9.5) Use Formulas to Solve Problems

Solve the equation for the indicated variable.

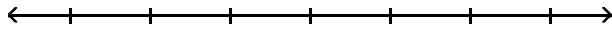
6) $A = P + PRT$ for T 6) _____
A) $T = \frac{A - P}{PR}$ B) $T = \frac{P - A}{PR}$ C) $T = \frac{A}{R}$ D) $T = \frac{PR}{A - P}$

Objective: (9.5) Solve a Formula or Equation for One of Its Variables

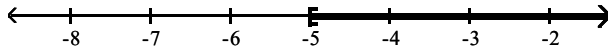
Solve the inequality. Graph the solution set and write it in interval notation.

7) $-16x - 32 \leq -4(3x + 3)$

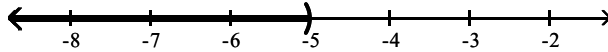
7) _____



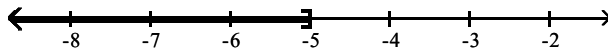
A) $[-5, \infty)$



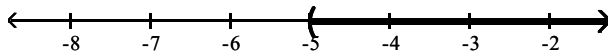
B) $(-\infty, -5)$



C) $(-\infty, -5]$



D) $(-5, \infty)$



Objective: (9.6) Use Both Properties to Solve Inequalities

Solve.

8) The area of a rectangle must be at least 84 square feet. If the length is 7 feet, find the minimum for the rectangle's width.

8) _____

A) 12 ft

B) 35 ft

C) 13 ft

D) $\frac{1}{12}$ ft

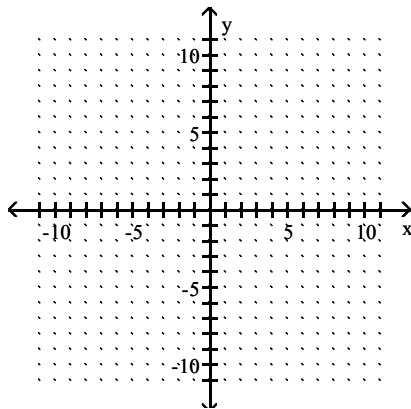
Objective: (9.6) Solve Problems Modeled by Inequalities

Find three ordered pair solutions by completing the table. Then use the ordered pairs to graph the equation.

9) $y = -2x - 4$

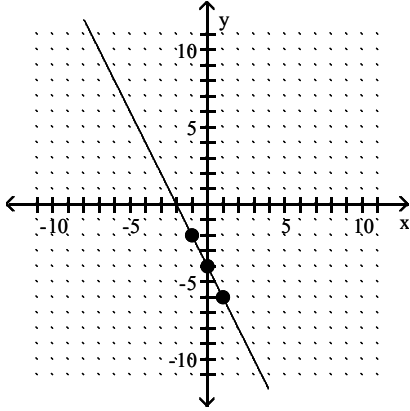
9) _____

x	y
0	
1	
-1	



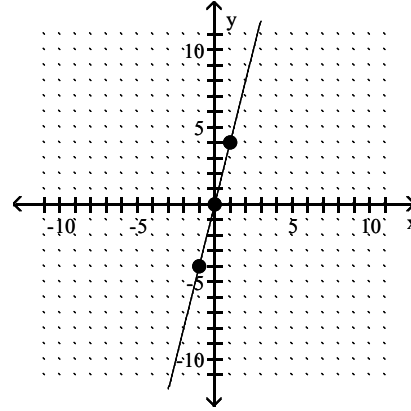
A)

x	y
0	-4
1	-6
-1	-2



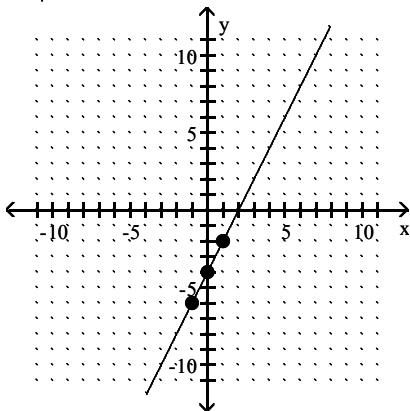
B)

x	y
0	0
1	4
-1	-4



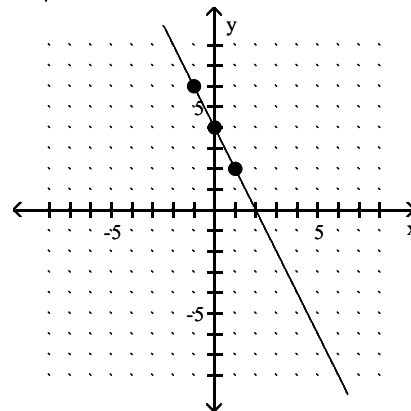
C)

x	y
0	-4
1	-2
-1	-6



D)

x	y
0	4
1	2
-1	6

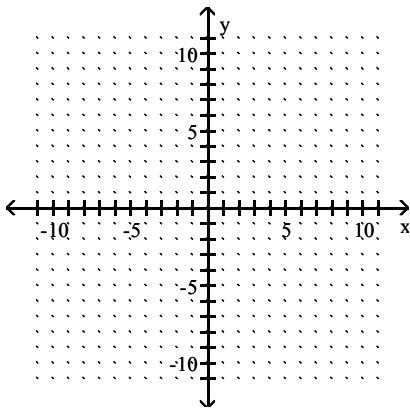


Objective: (10.2) Graph a linear equation by finding and plotting ordered pair solutions.

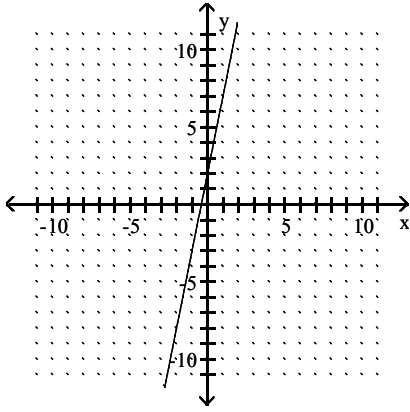
Graph the linear equation.

10) $5y - 25x = 10$

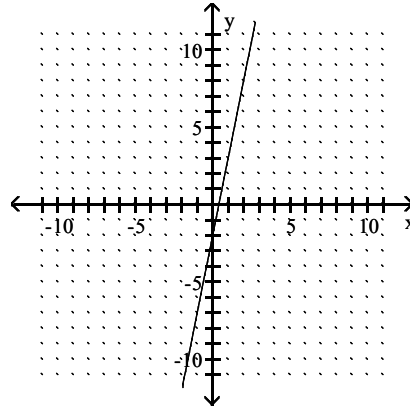
10) _____



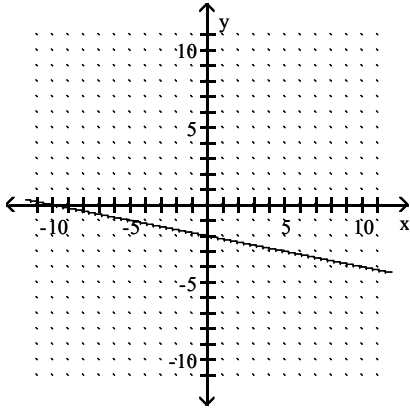
A)



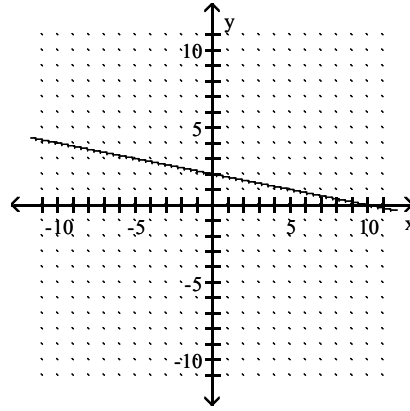
B)



C)

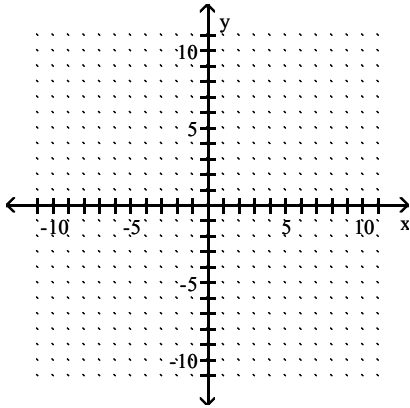


D)



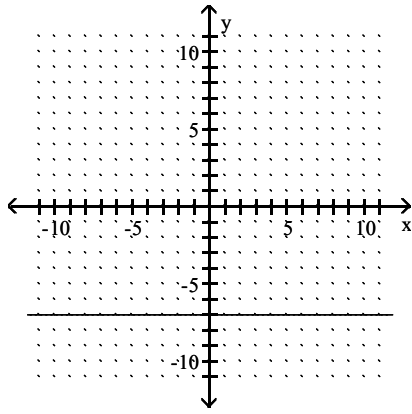
Objective: (10.2) Graph a linear equation by finding and plotting ordered pair solutions.

11) $y = -7$

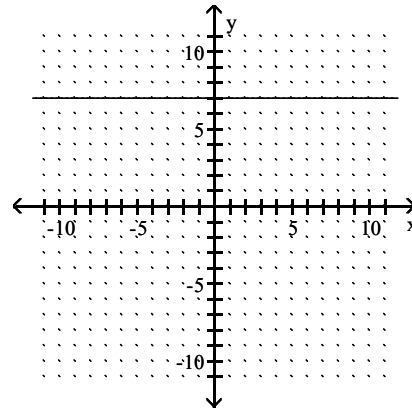


11) _____

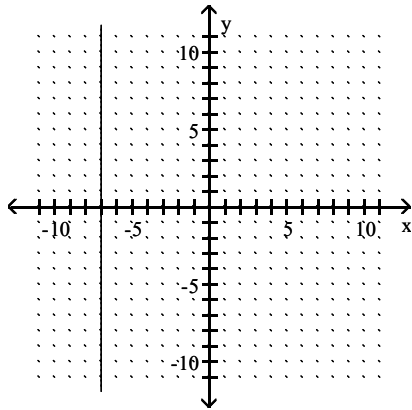
A)



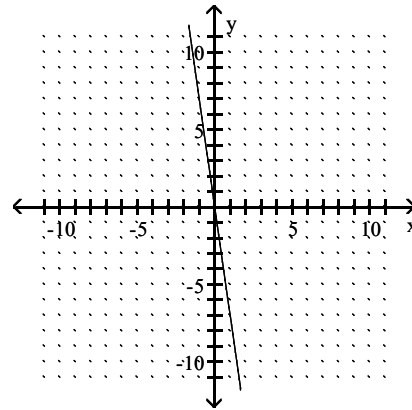
B)



C)

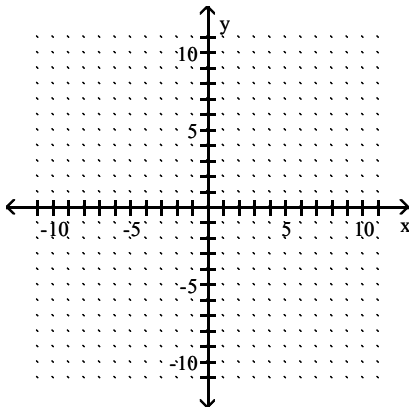


D)



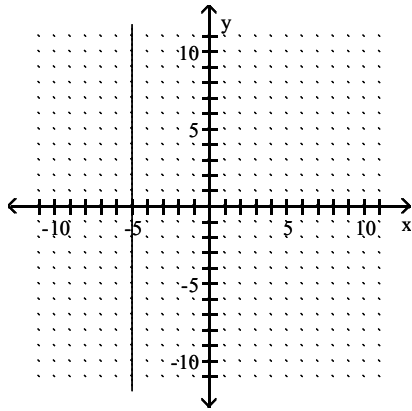
Objective: (10.2) Graph a linear equation by finding and plotting ordered pair solutions.

12) $x = -5$

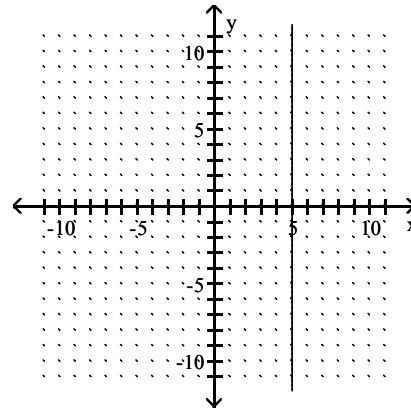


12) _____

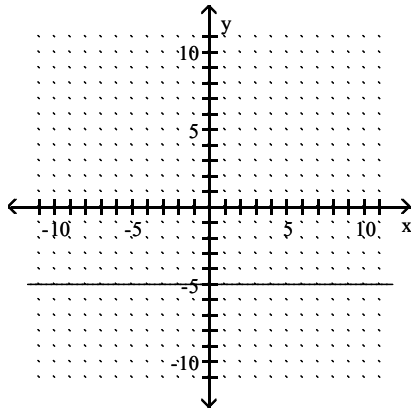
A)



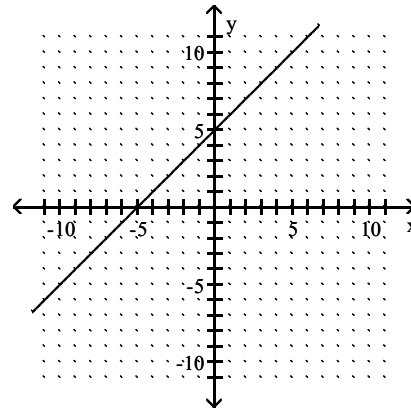
B)



C)



D)

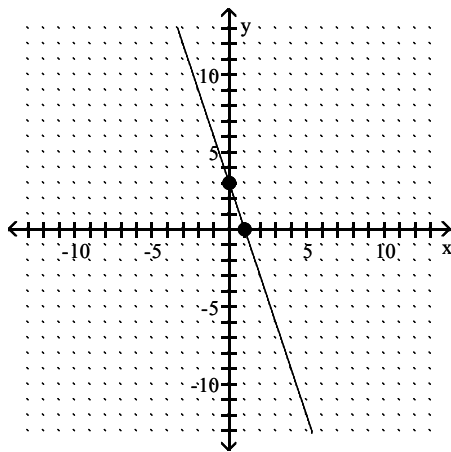


Objective: (10.2) Graph a linear equation by finding and plotting ordered pair solutions.

Identify the intercepts.

13)

13) _____



A) (1, 0), (0, 3)

B) (-1, 0), (0, 3)

C) (1, 0), (0, -3)

D) (-3, 0), (0, 3)

Objective: (10.3) Identify intercepts of a graph.

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

14) (-6, 9) and (-1, 6)

14) _____

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

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

C) $-\frac{15}{7}$

D) $\frac{3}{5}$

Objective: (10.4) Find the slope of a line given two points of the line.

Find the slope of the line.

15) $8x - 5y = 40$

A) $m = \frac{8}{5}$

B) $m = -\frac{8}{5}$

C) $m = \frac{5}{8}$

D) $m = 8$

15) _____

Objective: (10.4) Find the slope of a line given its equation.

Determine whether the pair of lines is parallel, perpendicular, or neither.

16) $y = \frac{5}{2}x + 2$

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

A) parallel

B) perpendicular

C) neither

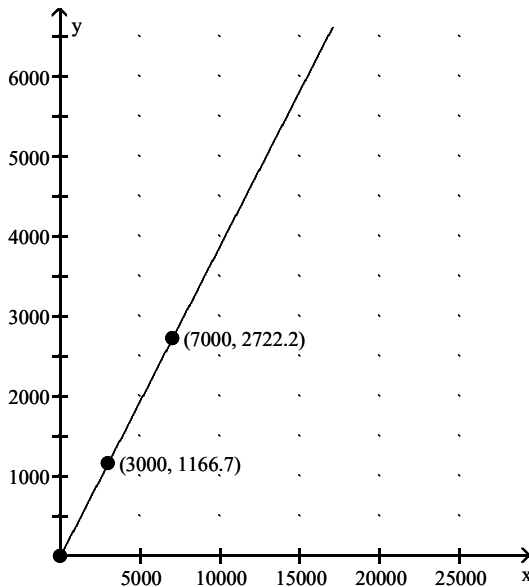
16) _____

Objective: (10.4) Compare the slopes of parallel and perpendicular lines.

Find the slope of the line and write the slope as a rate of change. Don't forget to attach the proper units.

17) The graph shows the total cost y (in dollars) of owning and operating a mini-van where x is the number of miles driven.

17) _____



A) \$0.39 per mile

B) \$2.57 per mile

C) \$25.00 per mile

D) cannot be determined

Objective: (10.4) Use slope as a rate of change.

Find an equation of the line described. Write the equation in slope-intercept form if possible.

18) Slope 2, through (5, 2)

A) $y = 2x - 8$

B) $y = 2x + 8$

C) $x = 2y - 8$

D) $x = 2y + 8$

18) _____

Objective: (10.5) Use the point-slope form to find an equation of a line given its slope and a point of the line.

Find an equation of the line through the pair of points. Write the equation in the form $Ax + By = C$.

19) (-6, 3) and (0, -2)

A) $-5x - 6y = 12$

B) $5x - 6y = 12$

C) $9x - 2y = -4$

D) $-9x + 2y = -4$

19) _____

Objective: (10.5) Use the point-slope form to find an equation given two points of the line.

Evaluate the function.

20) Find $f(4)$ when $f(x) = x^2 + 4x - 3$.

A) 29

B) 35

C) 3

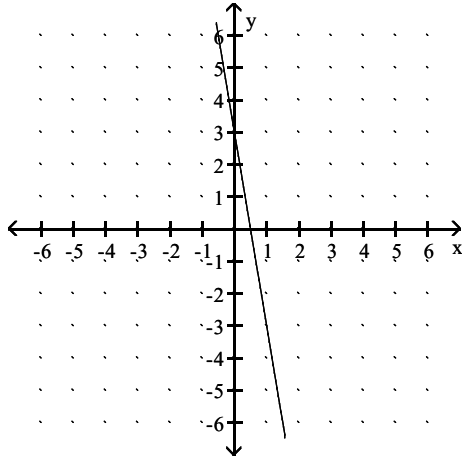
D) -3

20) _____

Objective: (10.6) Use function notation.

Find the domain and range of the function graphed.

21)



21) _____

A) domain: $(-\infty, \infty)$; range: $(-\infty, \infty)$

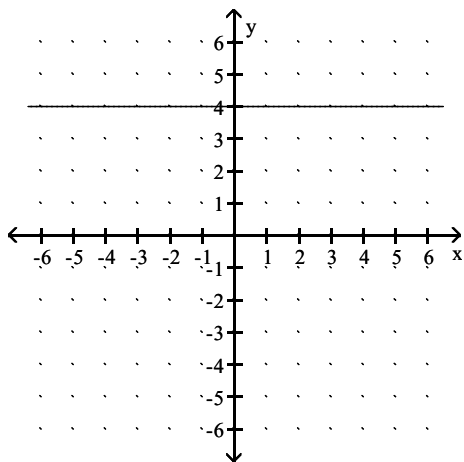
B) domain: $(-\infty, \infty)$; range: $\{3\}$

C) domain: $\left\{\frac{1}{2}\right\}$; range: $(-\infty, \infty)$

D) domain: $\left\{\frac{1}{2}\right\}$; range: $\{3\}$

Objective: (10.6) Use function notation.

22)



22) _____

A) domain: $(-\infty, \infty)$; range: $\{4\}$

B) domain: $(-\infty, \infty)$; range: $(-\infty, \infty)$

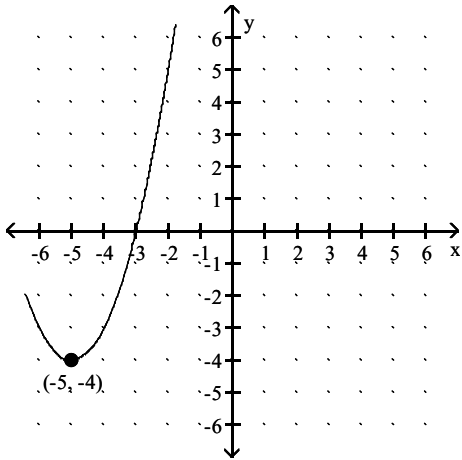
C) domain: $(-\infty, \infty)$; range: $(-\infty, 4) \cup (4, \infty)$

D) domain: $(-\infty, 4) \cup (4, \infty)$; range: $(-\infty, \infty)$

Objective: (10.6) Use function notation.

23)

23) _____

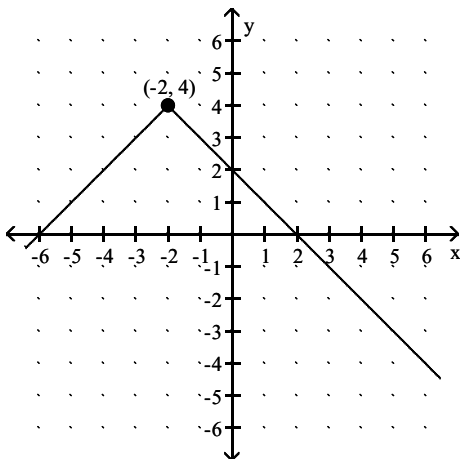


- A) domain: $(-\infty, \infty)$; range: $[-4, \infty)$
- B) domain: $[-5, \infty)$; range: $[-4, \infty)$
- C) domain: $(-\infty, \infty)$; range: $(-\infty, \infty)$
- D) domain: $(-\infty, -5) \cup (-5, \infty)$; range: $(-\infty, -4) \cup (-4, \infty)$

Objective: (10.6) Use function notation.

24)

24) _____



- A) domain: $(-\infty, \infty)$; range: $(-\infty, 4]$
- B) domain: $(-\infty, \infty)$; range: $(-\infty, \infty)$
- C) domain: $(-\infty, -2]$; range: $(-\infty, 4]$
- D) domain: $(-\infty, -2) \cup (-2, \infty)$; range: $(-\infty, 4) \cup (4, \infty)$

Objective: (10.6) Use function notation.

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

25) $(3, -4)$;

25) _____

$$\begin{cases} 3x + y = 5 \\ 4x + 3y = 0 \end{cases}$$

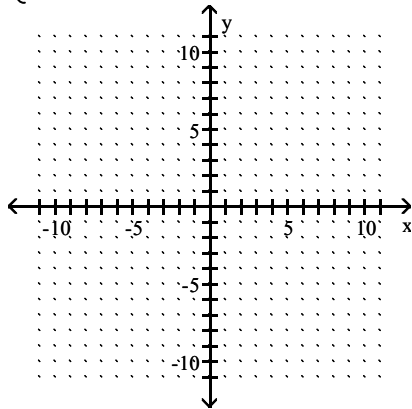
- A) Yes
- B) No

Objective: (11.1) Determine if an ordered pair is a solution of a system of equations in two variables.

Solve the system of equations by graphing.

$$26) \begin{cases} x + y = -3 \\ x + y = -4 \end{cases}$$

26) _____



- A) no solution B) (-2, -1) C) (-2, -2) D) (-4, 1)

Objective: (11.1) Solve a system of linear equations by graphing.

Solve the system of equations by the substitution method.

$$27) \begin{cases} y = 4x - 1 \\ 4y - 20x = -24 \end{cases}$$

27) _____

- A) (5, 19) B) (19, 5)
C) infinite number of solutions D) no solution

Objective: (11.2) Use the substitution method to solve a system of linear equations.

Solve the system of equations by the addition method.

$$28) \begin{cases} 5x + y = -58 \\ 5x - y = 8 \end{cases}$$

28) _____

- A) (-5, -33) B) (-33, -5)
C) infinite number of solutions D) no solution

Objective: (11.3) Use the addition method to solve a system of linear equations.

$$29) \begin{cases} 3x + 7y = -13 \\ 7x + 3y = 23 \end{cases}$$

29) _____

- A) (5, -4) B) (-5, 4) C) (5, 4) D) (-5, -4)

Objective: (11.3) Use the addition method to solve a system of linear equations.

Without actually solving the problem, choose the correct solution by deciding which choice satisfies the given conditions.

30) Jorge has a total of 50 coins, all of which are either dimes or nickels. The total value of the coins is \$4.15. Find the number of each type of coin. 30) _____

- A) 17 nickels; 33 dimes B) 19 nickels; 31 dimes
C) 22 nickels; 28 dimes D) 33 nickels; 17 dimes

Objective: (11.5) Solve problems that can be modeled by a system of two linear equations.

Solve.

- 31) A vendor sells hot dogs and bags of potato chips. A customer buys 3 hot dogs and 5 bags of potato chips for \$13.00. Another customer buys 5 hot dogs and 2 bags of potato chips for \$13.75. Find the cost of each item. 31) _____
- A) \$2.25 for a hot dog; \$1.25 for a bag of potato chips
B) \$1.25 for a hot dog; \$2.25 for a bag of potato chips
C) \$2.50 for a hot dog; \$1.50 for a bag of potato chips
D) \$2.25 for a hot dog; \$1.50 for a bag of potato chips

Objective: (11.5) Solve problems that can be modeled by a system of two linear equations.

Use the power rule and the power of a product or quotient rule to simplify the expression.

- 32) $(4x^3y^3)^2$ 32) _____
- A) $16x^6y^6$ B) $4x^5y^5$ C) $4x^6y^6$ D) $16x^5y^5$

Objective: (12.1) Use the power rules for products and quotients.

Use the quotient rule to simplify the expression.

- 33) $\frac{45m^3n^7}{9m^2n^5}$ 33) _____
- A) $5mn^2$ B) $45mn^2$ C) $5m^5n^{12}$ D) $5n^2$

Objective: (12.1) Use the quotient rule for exponents.

Multiply.

- 34) $(x + 12)(x^3 + 2x - 5)$ 34) _____
- A) $x^4 + 12x^3 + 2x^2 + 19x - 60$ B) $x^3 + 14x^2 + 19x - 60$
C) $x^4 + 2x^2 - 5x + 12$ D) $x^4 + 12x^3 + 2x^2 + 29x + 60$

Objective: (12.3) Use the distributive property to multiply polynomials.

- 35) $(8x - 1)(x^2 - 3x + 1)$ 35) _____
- A) $8x^3 - 25x^2 + 11x - 1$ B) $8x^3 - 23x^2 + 5x - 1$
C) $8x^3 - 24x^2 + 8x + 1$ D) $8x^3 + 25x^2 - 11x + 1$

Objective: (12.3) Use the distributive property to multiply polynomials.

- 36) $(3a - 7)^2$ 36) _____
- A) $9a^2 - 42a + 49$ B) $9a^2 + 49$ C) $3a^2 - 42a + 49$ D) $3a^2 + 49$

Objective: (12.4) Square a binomial.

- 37) $(a - 1)(a + 1)$ 37) _____
- A) $a^2 - 1$ B) $a^2 - 2$ C) $a^2 - 2a - 1$ D) $a^2 + 2a - 1$

Objective: (12.4) Multiply the sum and difference of two terms.

Simplify the expression. Write the result using positive exponents only.

38) $\frac{2^{-7}x^{-5}y^3}{2^{-4}x^{-8}y^6}$ 38) _____

A) $\frac{x^3}{8y^3}$

B) $\frac{1}{8x^8y^3}$

C) $\frac{3x^3}{y^3}$

D) $\frac{8}{x^3y^3}$

Objective: (12.5) Use all the rules and definitions for exponents to simplify exponential expressions.

Factor out the GCF from the polynomial.

39) $20x^4y + 36xy^3$ 39) _____

A) $4xy(5x^3 + 9y^2)$

B) $xy(20x^3 + 36y^2)$

C) $4x(5x^3y + 9y^3)$

D) $4y(5x^4 + 9xy^2)$

Objective: (13.1) Factor out the greatest common factor from a polynomial.

Factor the four-term polynomial by grouping.

40) $2x + 24 + xy + 12y$ 40) _____

A) $(x + 12)(2 + y)$

B) $(y + 12)(x + 2)$

C) $(x + 12y)(2 + y)$

D) $(y + 12)(2x + y)$

Objective: (13.1) Factor a polynomial by grouping.

Factor the trinomial completely. If the polynomial cannot be factored, write "prime."

41) $x^2 - x - 42$ 41) _____

A) $(x + 6)(x - 7)$

B) $(x + 7)(x - 6)$

C) $(x + 1)(x - 42)$

D) prime

Objective: (13.2) Factor trinomials of the form $x^2 + bx + c$.

42) $3x - 10 + x^2$ 42) _____

A) $(x + 5)(x - 2)$

B) $(x - 5)(x + 2)$

C) $(x - 5)(x + 1)$

D) prime

Objective: (13.2) Factor trinomials of the form $x^2 + bx + c$.

Factor the binomial completely.

43) $81x^2 - 49$ 43) _____

A) $(9x + 7)(9x - 7)$

B) $(9x - 7)^2$

C) $(9x + 7)^2$

D) prime

Objective: (13.5) Factor the difference of two squares.

Solve the equation.

44) $(2x + 1)(5x - 3) = 0$ 44) _____

A) $-\frac{1}{2}, \frac{3}{5}$

B) $\frac{1}{2}, -\frac{3}{5}$

C) 1, 2

D) $2, \frac{5}{3}$

Objective: (13.6) Solve quadratic equations by factoring.

45) $x^2 + 2x - 80 = 0$ 45) _____

A) -10, 8

B) 10, 8

C) -10, 1

D) 10, -8

Objective: (13.6) Solve quadratic equations by factoring.

46) $2x^2 - 7x - 9 = 0$ 46) _____

A) $\frac{9}{2}, -1$

B) $\frac{2}{9}, -1$

C) $\frac{2}{9}, 1$

D) $\frac{2}{9}, 0$

Objective: (13.6) Solve quadratic equations by factoring.

Find the product and simplify.

$$47) \frac{z^3}{20z} \cdot \frac{5}{2z^2}$$

47) _____

A) $\frac{1}{8}$

B) $\frac{1}{8z}$

C) $\frac{z}{8}$

D) $\frac{z^3}{8z^2}$

Objective: (14.2) Multiply rational expressions.

Find the quotient and simplify.

$$48) \frac{2x^{13}}{7x^6} \div \frac{4x}{14x^3}$$

48) _____

A) x^9

B) $\frac{4x^5}{49}$

C) $\frac{2x^9}{7}$

D) $\frac{8x^5}{98}$

Objective: (14.2) Divide rational expressions.

Perform the indicated operation. Simplify if possible.

$$49) \frac{x^2 - 8x}{x - 6} + \frac{12}{x - 6}$$

49) _____

A) $x - 2$

B) $x + 6$

C) $x + 2$

D) $x - 6$

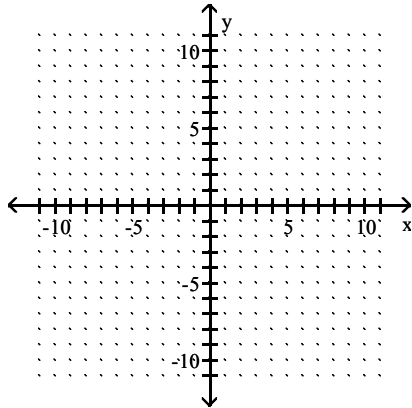
Objective: (14.3) Add and subtract rational expressions with the same denominator.

m50-19

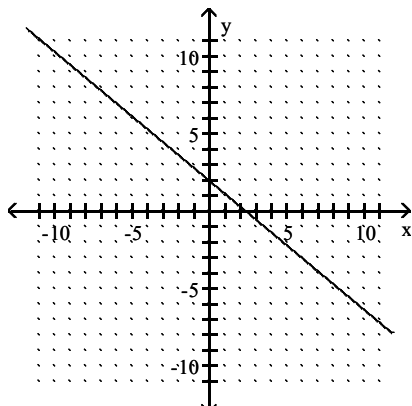
Graph the linear function.

$$50) f(x) = -\frac{5}{6}x + 2$$

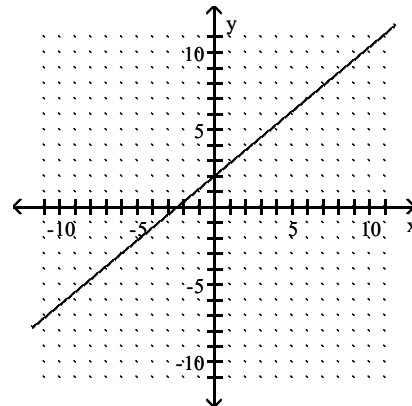
50) _____



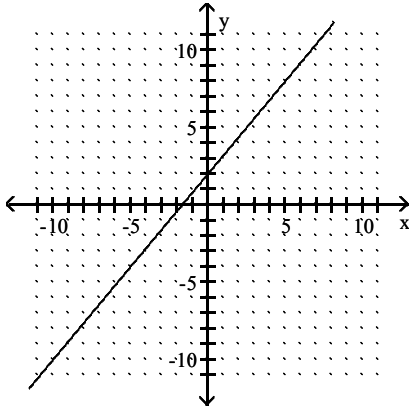
A)



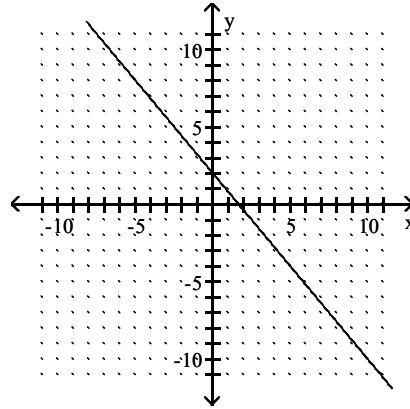
B)



C)



D)



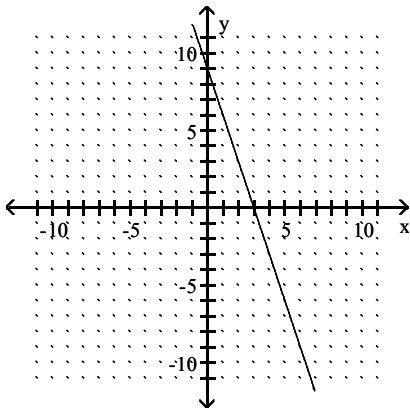
Objective: (15.1) Graph linear functions.

Match the linear function with its graph.

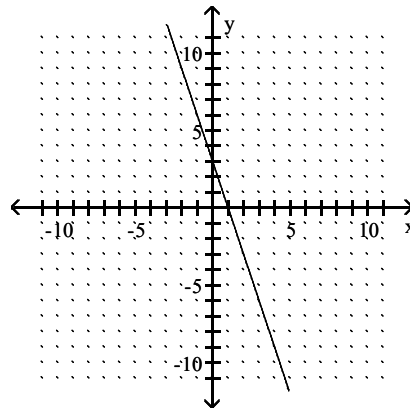
51) $f(x) = -3x + 9$

51) _____

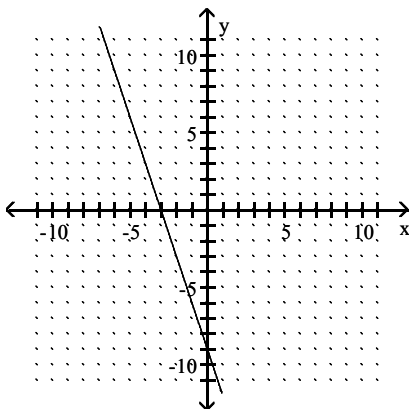
A)



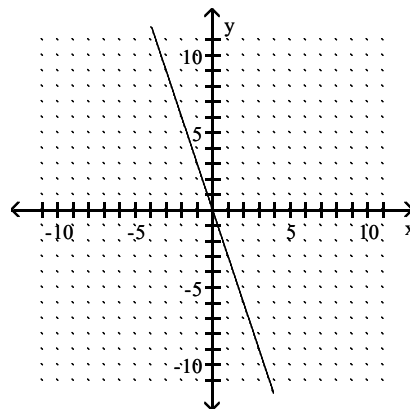
B)



C)



D)



Objective: (15.1) Graph linear functions.

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

52) Through $(2, 4)$; perpendicular to $f(x) = -3x + 4$

52) _____

A) $f(x) = \frac{1}{3}x + \frac{10}{3}$

B) $f(x) = -\frac{1}{3}x + \frac{10}{3}$

C) $f(x) = 3x + \frac{10}{3}$

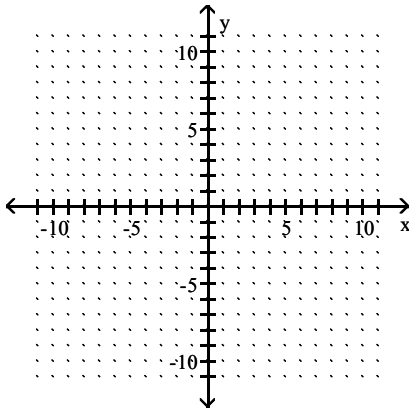
D) $f(x) = -3x + \frac{10}{3}$

Objective: (15.1) Find equations of parallel and perpendicular lines.

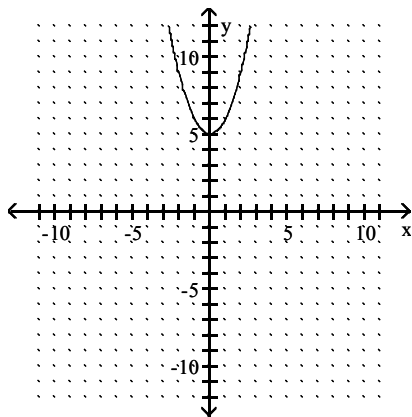
Graph the function.

53) $f(x) = x^2 + 5$

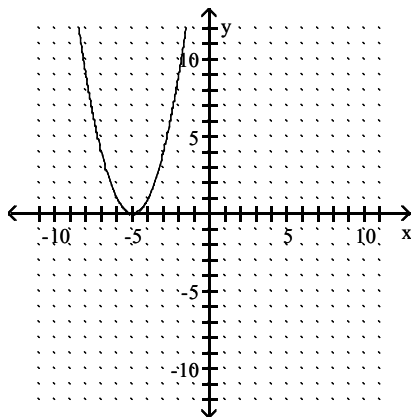
53) _____



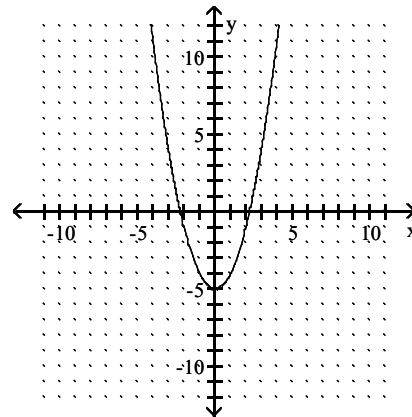
A)



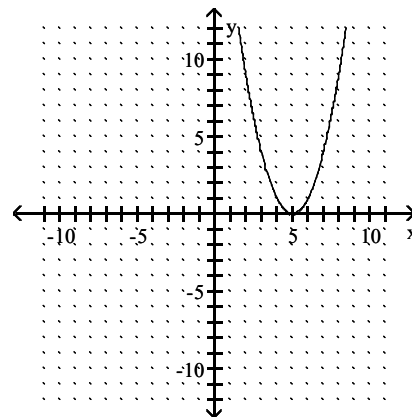
C)



B)



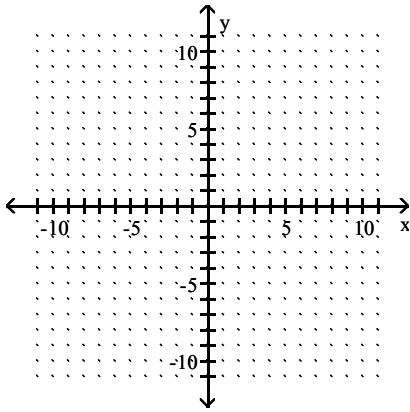
D)



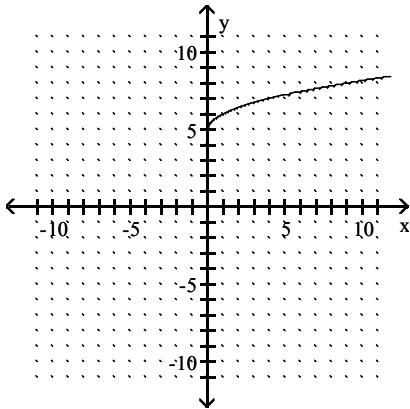
Objective: (15.2) Graph nonlinear functions.

54) $f(x) = \sqrt{x} + 5$

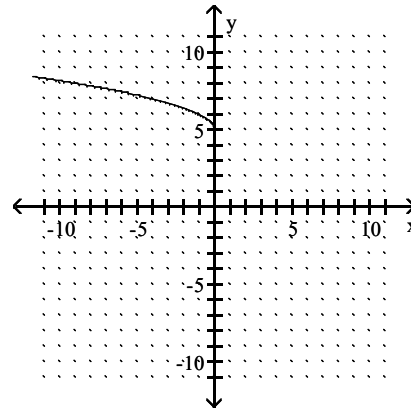
54) _____



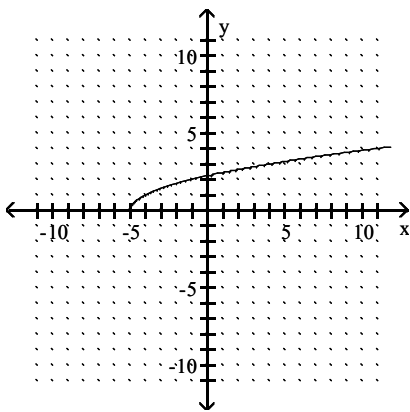
A)



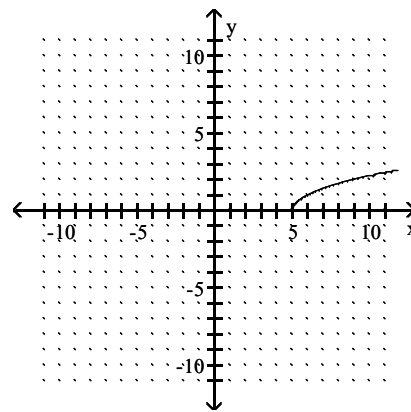
B)



C)



D)



Objective: (15.2) Graph nonlinear functions.

If y varies directly as x , find the direct variation equation for the situation.

55) $y = 3$ when $x = 21$

55) _____

A) $y = \frac{1}{7}x$

B) $y = 7x$

C) $y = x + 18$

D) $y = \frac{1}{3}x$

Objective: (15.4) Solve problems involving direct variation.

Solve.

56) The amount of water used to take a shower is directly proportional to the amount of time that the shower is in use. A shower lasting 23 minutes requires 18.4 gallons of water. Find the amount of water used in a shower lasting 7 minutes.

56) _____

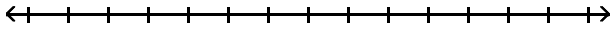
- A) 5.6 gallons B) 161 gallons C) 4.8 gallons D) 6.4 gallons

Objective: (15.4) Solve problems involving direct variation.

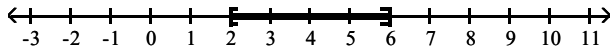
Solve the compound inequality. Graph the solution set.

57) $13 \leq 4t + 5 \leq 29$

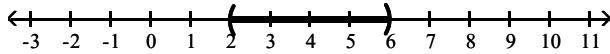
57) _____



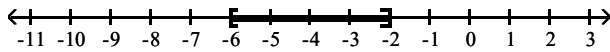
- A) $[2, 6]$



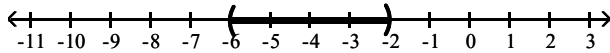
- B) $(2, 6)$



- C) $[-6, -2]$



- D) $(-6, -2)$



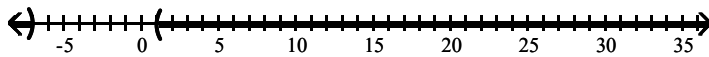
Objective: (16.1) Solve compound inequalities containing "and."
m50-20

Solve the inequality. Graph the solution set.

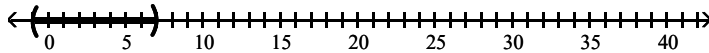
58) $|x + 3| > 4$

58) _____

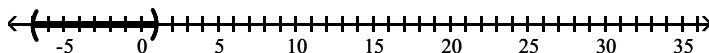
- A) $(-\infty, -7) \cup (1, \infty)$



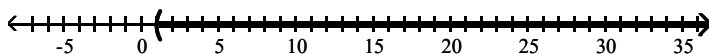
- B) $(-1, 7)$



- C) $(-7, 1)$



- D) $(1, \infty)$



Objective: (16.3) Solve absolute value inequalities of the form $|X| > a$.
m50-23

Determine whether the ordered pair given is a solution of the linear inequality in two variables.

59) $x + 2y > -3$; $(4, -3)$

A) Yes

B) No

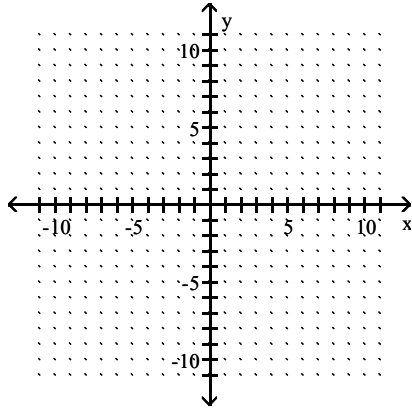
59) _____

Objective: (16.4) Determine whether an ordered pair is a solution of a linear inequality in two variables.

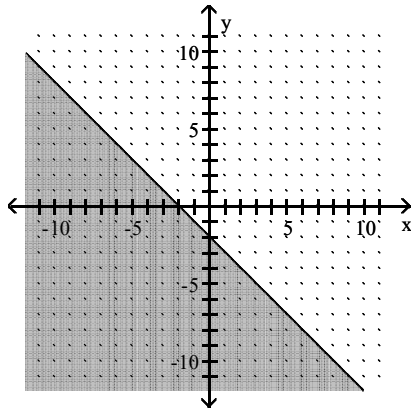
Graph the inequality.

60) $x + y \leq -2$

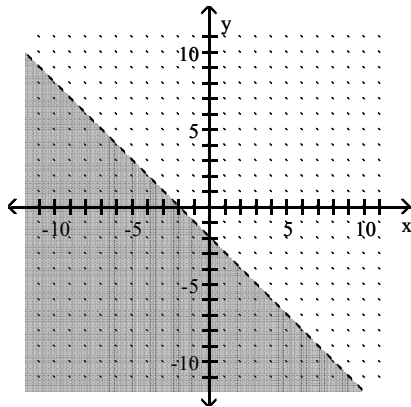
60) _____



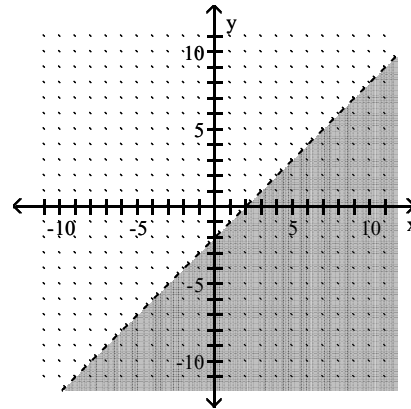
A)



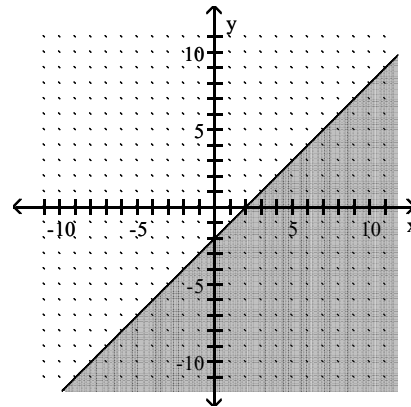
C)



B)



D)



Objective: (16.4) Graph a linear inequality in two variables.

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

61) $\sqrt{16x^{10}}$

A) $4x^5$

B) $4x^{10}$

C) $16x^5$

D) $4x^2$

61) _____

Objective: (17.1) Find square roots.

m50-24

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

62) $(243x^{25})^{1/5}$ 62) _____
A) $3x^5$ B) $243x^5$ C) $3x^{25}$ D) $3\sqrt[5]{x}$

Objective: (17.2) Understand the meaning of $a^{(1/n)}$.

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

63) $\sqrt{20}$ 63) _____
A) $2\sqrt{5}$ B) $5\sqrt{2}$ C) 10 D) 4

Objective: (17.3) Simplify radicals.

64) $\sqrt{320k^7q^8}$ 64) _____
A) $8k^3q^4\sqrt{5k}$ B) $8k^7q^8\sqrt{5k}$ C) $8k^3q^4\sqrt{5}$ D) $8q^4\sqrt{5k^7}$

Objective: (17.3) Simplify radicals.

65) $\sqrt[3]{512x^4y^5}$ 65) _____
A) $8xy\sqrt[3]{xy^2}$ B) $5xy\sqrt[3]{xy^2}$ C) $8xy\sqrt[3]{xy}$ D) $8xy\sqrt[3]{xy^2}$

Objective: (17.3) Simplify radicals.

m50-30

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

66) $\frac{\sqrt{5} - \sqrt{6}}{\sqrt{5} + \sqrt{6}}$ 66) _____
A) $2\sqrt{30} - 11$ B) $11 - 2\sqrt{30}$ C) $11 + 2\sqrt{30}$ D) $-11 - 2\sqrt{30}$

Objective: (17.5) Rationalize denominators having two terms.

Solve.

67) $\sqrt{x+4} = 8$ 67) _____
A) 60 B) 64 C) 68 D) 144

Objective: (17.6) Solve equations that contain radical expressions.

m50-33

Use the square root property to solve the equation.

68) $(x - 5)^2 = 36$ 68) _____
A) 11, -1 B) -1, -11 C) 6, -6 D) 41

Objective: (18.1) Use the square root property to solve quadratic equations.

m50-38

Use the quadratic formula to solve the equation.

69) $x^2 - 2x - 48 = 0$ 69) _____
A) -6, 8 B) 6, -8 C) 6, 8 D) -48, 0

Objective: (18.2) Solve quadratic equations by using the quadratic formula.

70) $x^2 + 24x + 144 = 0$ 70) _____
A) -12, 12 B) -12 C) $12 - i, 12 + i$ D) 12

Objective: (18.2) Solve quadratic equations by using the quadratic formula.

m50-39

71) $x^2 - 8x + 20 = 0$

A) $4 - 2i, 4 + 2i$

B) $4 - 4i, 4 + 4i$

C) $4 + 2i$

D) $6, 2$

71) _____

Objective: (18.2) Solve quadratic equations by using the quadratic formula.

m50-41

72) $2x^2 - 7x - 9 = 0$

A) $\frac{2}{9}, 1$

B) $\frac{9}{2}, -1$

C) $\frac{2}{9}, 0$

D) $\frac{2}{9}, -1$

72) _____

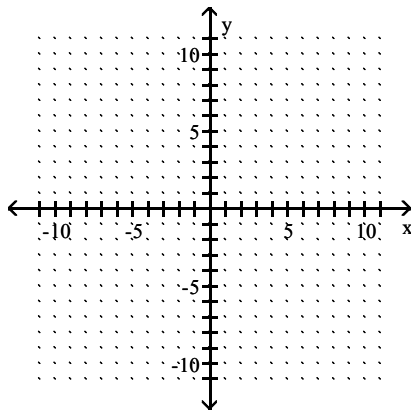
Objective: (18.2) Solve quadratic equations by using the quadratic formula.

m50-42

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

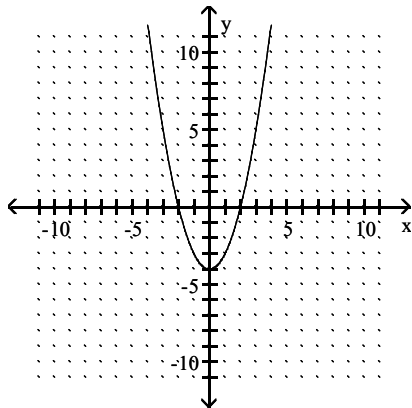
73) $f(x) = x^2 - 4$

73) _____

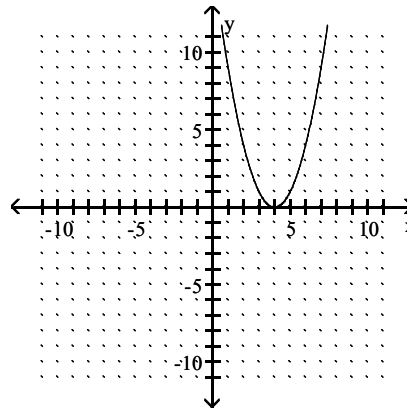


A) vertex $(0, -4)$; axis $x = 0$

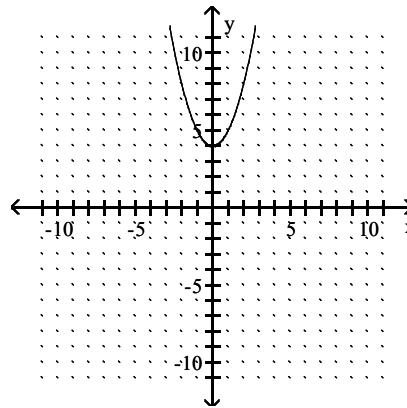
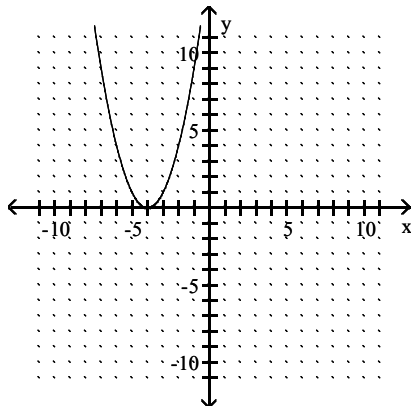
B) vertex $(4, 0)$; axis $x = 4$



C) vertex $(-4, 0)$; axis $x = -4$



D) vertex $(0, 4)$; axis $x = 0$

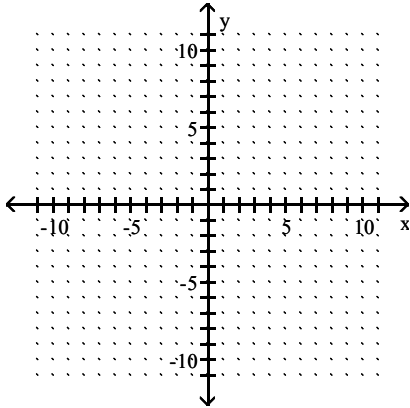


Objective: (18.5) Graph quadratic functions of the form $f(x) = x^2 + k$.

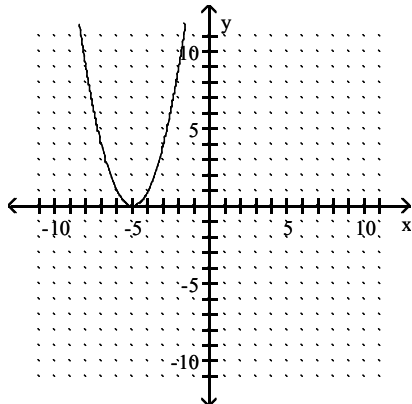
m50-44

74) $f(x) = (x + 5)^2$

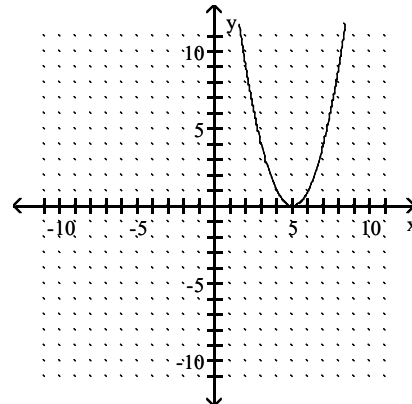
74) _____



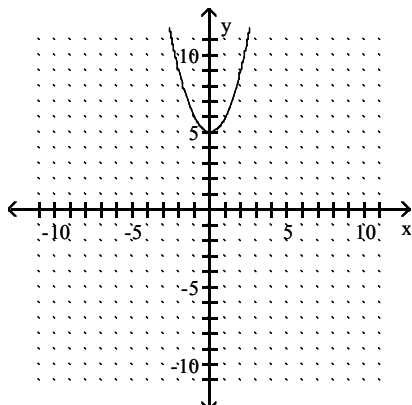
A) vertex $(-5, 0)$; axis $x = -5$



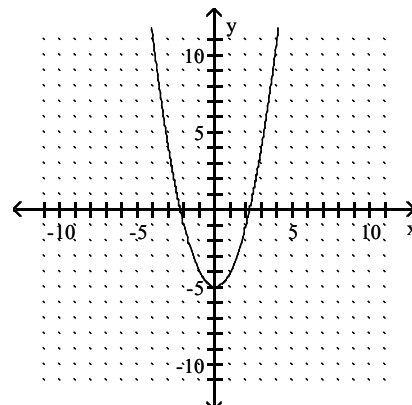
B) vertex $(5, 0)$; axis $x = 5$



C) vertex $(0, 5)$; axis $x = 0$



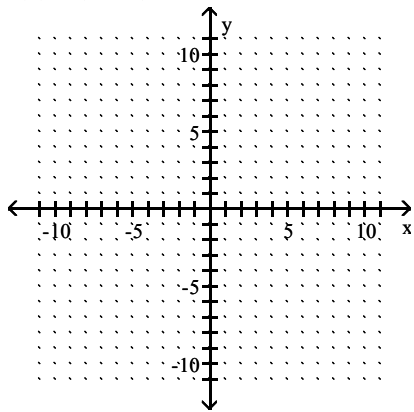
D) vertex $(0, -5)$; axis $x = 0$



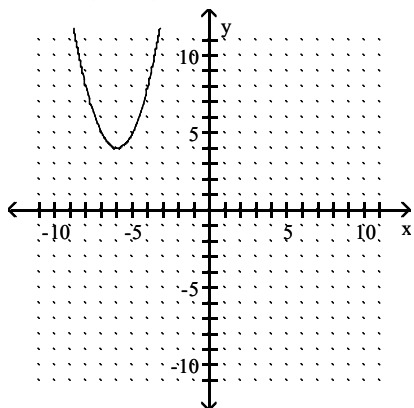
Objective: (18.5) Graph quadratic functions of the form $f(x) = (x - h)^2$.

75) $f(x) = (x + 6)^2 + 4$

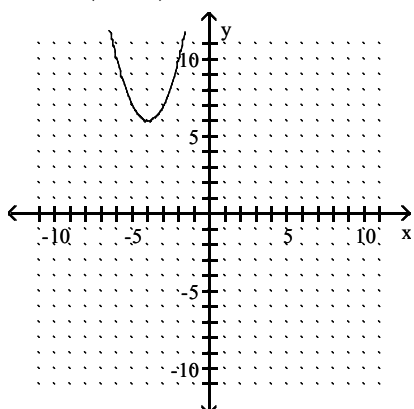
75) _____



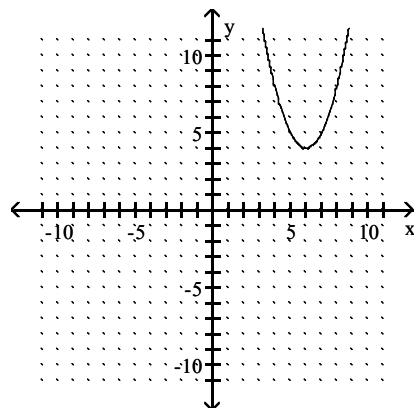
A) vertex $(-6, 4)$; axis $x = -6$



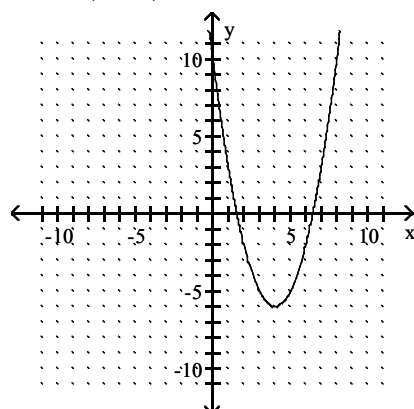
C) vertex $(-4, 6)$; axis $x = -4$



B) vertex $(6, 4)$; axis $x = 6$



D) vertex $(4, -6)$; axis $x = 4$



Objective: (18.5) Graph quadratic functions of the form $f(x) = (x - h)^2 + k$.

Find the vertex of the graph of the quadratic function.

76) $f(x) = -x^2 - 10x + 9$

76) _____

A) $(-5, 34)$

B) $(5, -66)$

C) $(-10, 9)$

D) $(5, -16)$

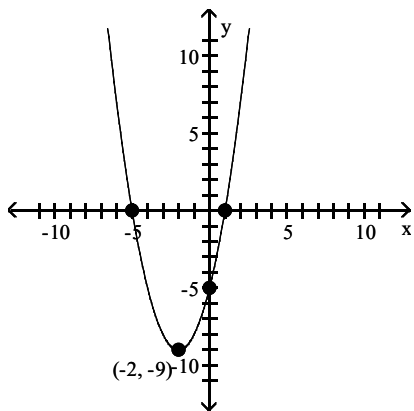
Objective: (18.6) Find the vertex of the graph of a quadratic function.

Match the function with its graph.

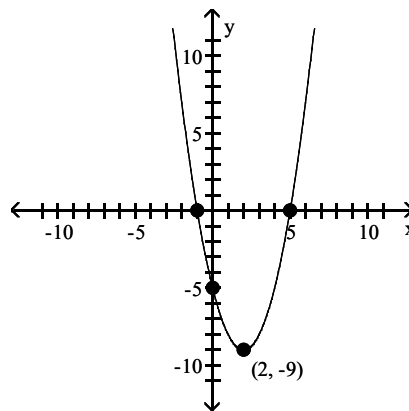
77) $f(x) = x^2 + 4x - 5$

77) _____

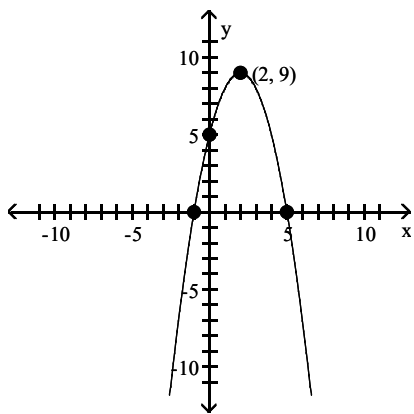
A)



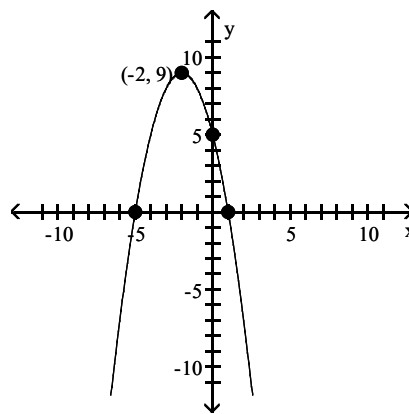
B)



C)



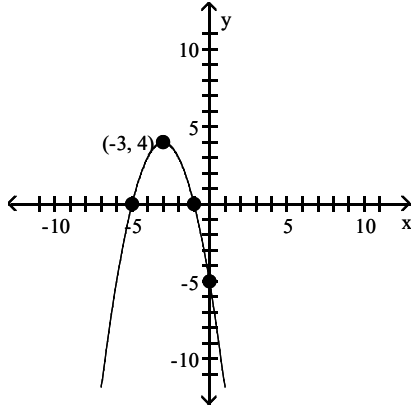
D)



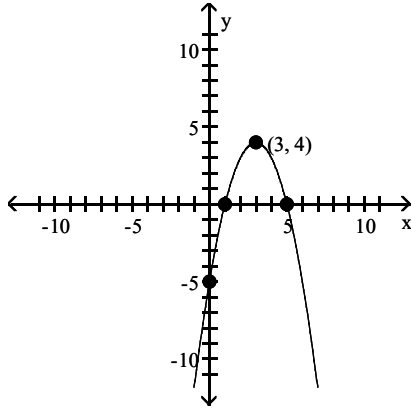
Objective: (18.6) Graph a quadratic function and find the vertex, intercepts, and direction of opening.

78) $f(x) = -x^2 - 6x - 5$

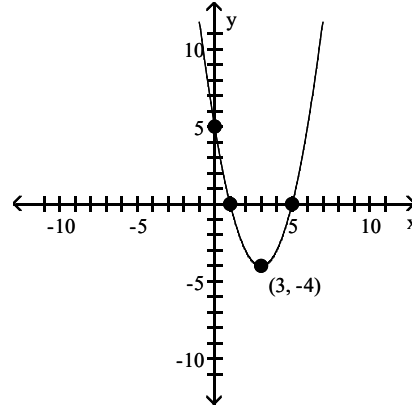
A)



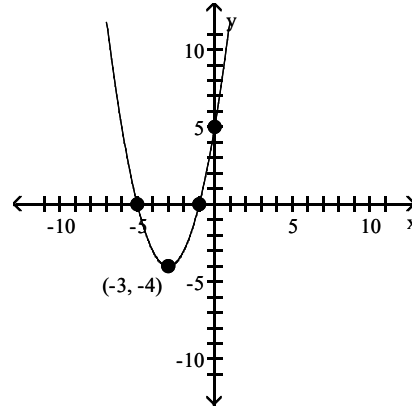
C)



B)



D)



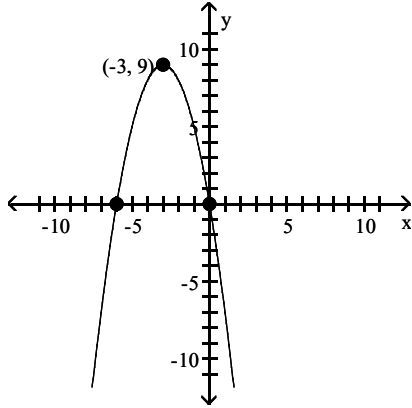
78) _____

Objective: (18.6) Graph a quadratic function and find the vertex, intercepts, and direction of opening.

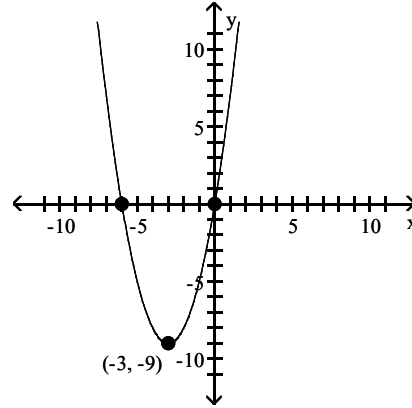
79) $f(x) = -x^2 - 6x$

79) _____

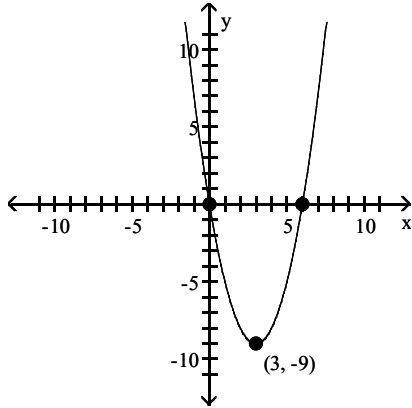
A)



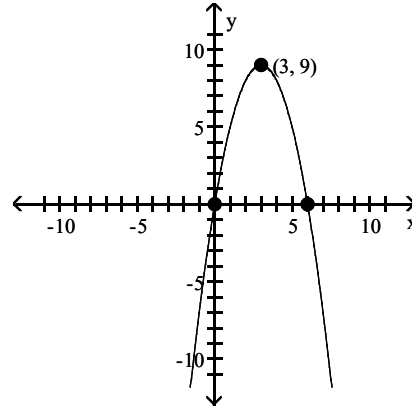
B)



C)



D)

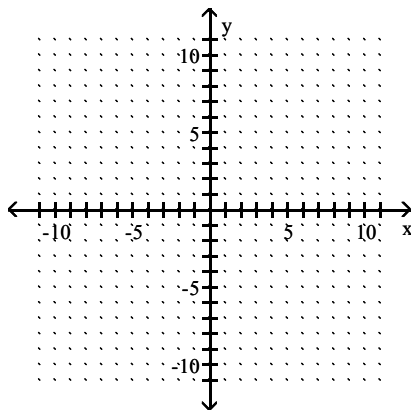


Objective: (18.6) Graph a quadratic function and find the vertex, intercepts, and direction of opening.

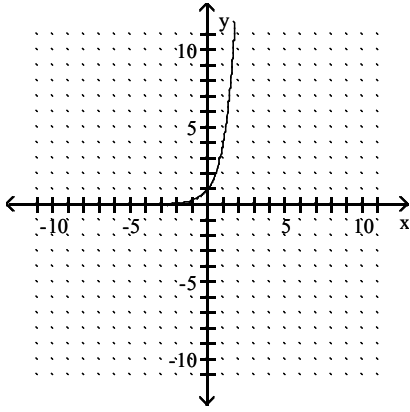
Graph the exponential function.

80) $f(x) = 4^x$

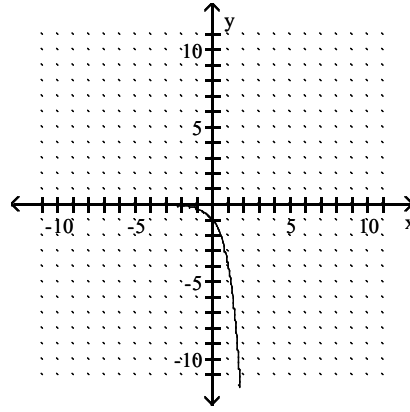
80) _____



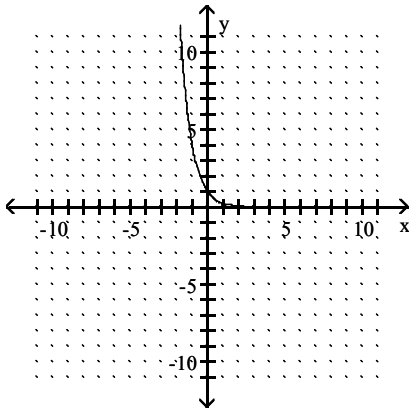
A)



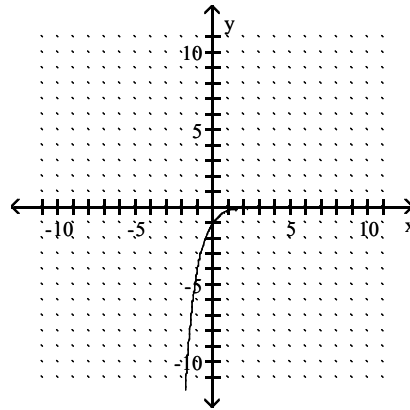
B)



C)



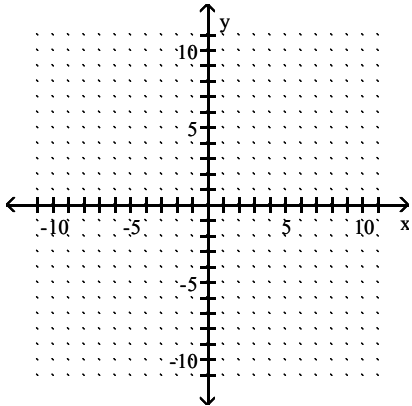
D)



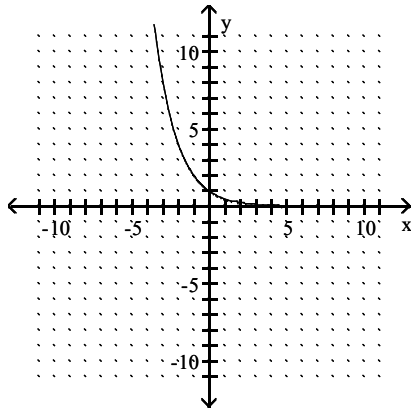
Objective: (19.3) Graph exponential functions.

81) $f(x) = \left(\frac{1}{2}\right)^x$

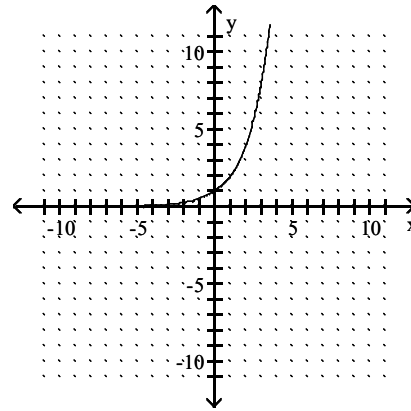
81) _____



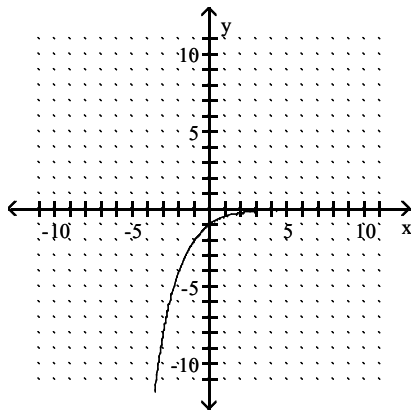
A)



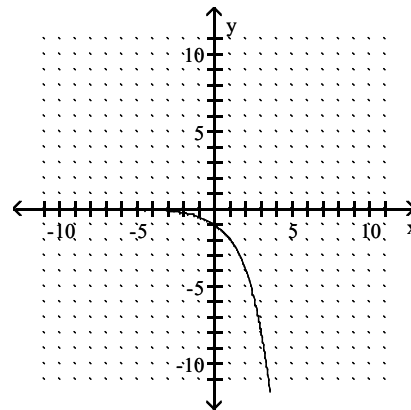
B)



C)



D)



Objective: (19.3) Graph exponential functions.

Solve.

82) Four bacteria are placed in a petri dish. The population will triple every day. The formula for the number of bacteria in the dish on day t is $N(t) = 4(3)^t$, where t is the number of days after the four bacteria are placed in the dish. How many bacteria are in the dish five days after the four bacteria are placed in the dish?

- A) 972 bacteria B) 60 bacteria C) 500 bacteria D) 12 bacteria

82) _____

Objective: (19.3) Solve problems modeled by exponential equations.

Write the first five terms of the sequence whose general term is given.

83) $a_n = 2n - 2$

- A) 0, 2, 4, 6, 8 B) 0, 1, 2, 3, 4 C) 4, 6, 8, 10, 12 D) 0, -2, -4, -6, -8

83) _____

Objective: (21.1) Write the terms of a sequence given its general term.

Answer Key

Testname: AAM032020185HIGH SCHOOL083

- 1) A
- 2) A
- 3) A
- 4) A
- 5) A
- 6) A
- 7) A
- 8) A
- 9) A
- 10) A
- 11) A
- 12) A
- 13) A
- 14) A
- 15) A
- 16) B
- 17) A
- 18) A
- 19) A
- 20) A
- 21) A
- 22) A
- 23) A
- 24) A
- 25) A
- 26) A
- 27) A
- 28) A
- 29) A
- 30) A
- 31) A
- 32) A
- 33) A
- 34) A
- 35) A
- 36) A
- 37) A
- 38) A
- 39) A
- 40) A
- 41) A
- 42) A
- 43) A
- 44) A
- 45) A
- 46) A
- 47) A
- 48) A
- 49) A
- 50) A

Answer Key

Testname: AAM032020185HIGH SCHOOL083

- 51) A
- 52) A
- 53) A
- 54) A
- 55) A
- 56) A
- 57) A
- 58) A
- 59) A
- 60) A
- 61) A
- 62) A
- 63) A
- 64) A
- 65) A
- 66) A
- 67) A
- 68) A
- 69) A
- 70) B
- 71) A
- 72) B
- 73) A
- 74) A
- 75) A
- 76) A
- 77) A
- 78) A
- 79) A
- 80) A
- 81) A
- 82) A
- 83) A