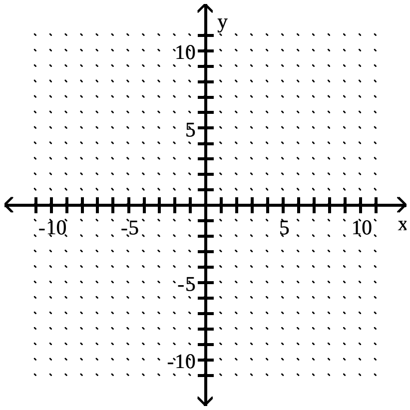
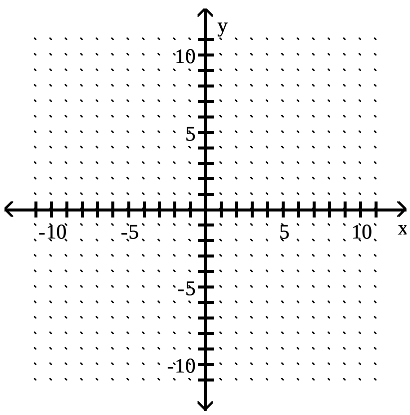
Math 115 Name________________________________
Sample Test Chapter 8

Graph the function.

1) $f(x) = 4x - 3$ 1) _____________



2) $f(x) = -\frac{5}{3}x + 2$ 2) _____________



Solve. Assume the exercise describes a linear relationship.

3) An investment is worth \$3129 in 1993. By 1997 it has grown to \$4145. Let y be the value of the investment in the year x, where x = 0 represents 1993. Write a linear equation that models the value of the investment in the year x. 3) _____________

Use function notation to write the equation of the line with the given slope and y –intercept.

4) Slope $\frac{2}{5}$; y–intercept (0, 7) 4) _____________

Write an equation of the line with the given slope and containing the given point. Write the equation using function notation.

5) Slope –3; through (–3, –6) 5) _____________

Find an equation of the line passing through the given points. Use function notation to write the equation.

6) (4, 29), (1, 14) 6) ______________

Write an equation of the line using function notation.

7) Horizontal; through (−4, 5) 7) ______________

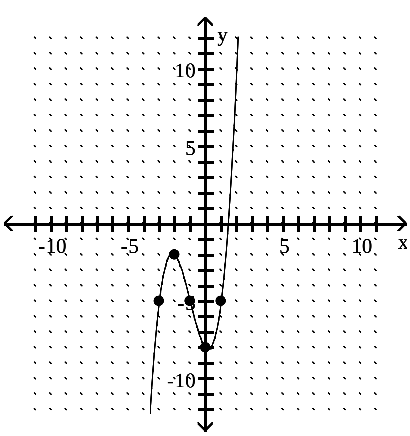
Find an equation of the line. Write the equation using function notation.

8) Through (9, 6); parallel to $f(x) = 4x - 6$ 8) ______________

9) Through (2, 3); perpendicular to $x - 4y = 4$ 9) ______________

Find the indicated value.

10) Use the graph to find $f(-1)$. 10) ______________

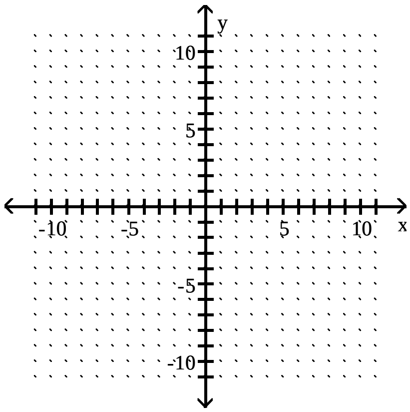


Solve.

11) The monthly cost of a certain long distance service is given by the linear function $C(t) = 0.06t + 8.95$ where $C(t)$ is in dollars and t is the amount of time in minutes called in a month. Find the cost of calling long distance for 120 minutes in a month. 11) ______________

Graph the function. State the domain and range of the function.

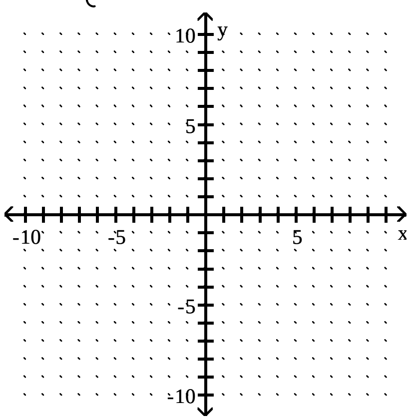
12) $f(x) = x^2 - 3$ 12) ______________



Graph the piecewise defined function.

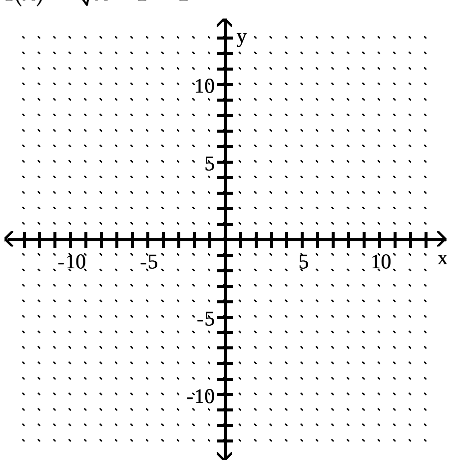
13) 13) ______________

$$f(x) = \begin{cases} 2x + 1 & \text{if } x \le 4 \\ -x & \text{if } x > 4 \end{cases}$$

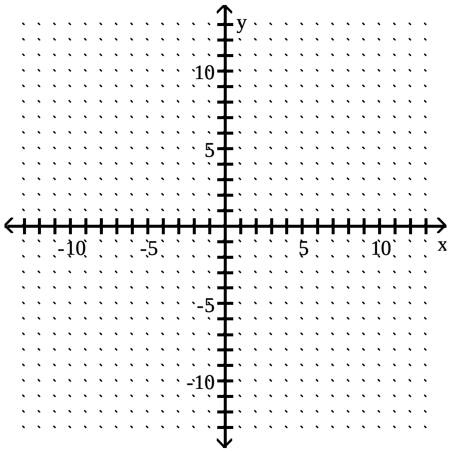


Graph the function.

14) $f(x) = \sqrt{x - 1} + 4$ 14) ______________



15) $f(x) = (x + 2)^2 + 7$ 15) ______________



Solve.

16) 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 16 minutes requires 8 gallons of water. Find the amount of water used in a shower lasting 11 minutes. 16) ______________

If y varies inversely as x, find the inverse variation equation for the situation.

17) $y = 6$ when $x = 9$ 17) ______________

Solve.

18) The amount of time it takes a swimmer to swim a race is inversely proportional to the average speed of the swimmer. A swimmer finishes a race in 30 seconds with an average speed of 5 feet per second. Find the average speed of the swimmer if it takes 25 seconds to finish the race. 18) ______________

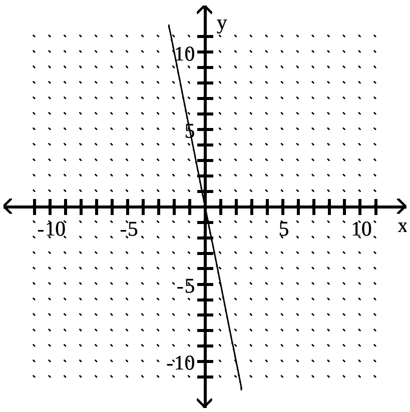
19) When the temperature stays the same, the volume of a gas is inversely proportional to the pressure of the gas. If a balloon is filled with 105 cubic inches of a gas at a pressure of 14 pounds per square inch, find the new pressure of the gas if the volume is decreased to 15 cubic inches. 19) ______________

20) The amount of paint needed to cover the walls of a room varies jointly as the perimeter of the room and the height of the wall. If a room with a perimeter of 60 feet and 6-foot walls requires 3.6 quarts of paint, find the amount of paint needed to cover the walls of a room with a perimeter of 50 feet and 6-foot walls.

20) ______________

Answer Key
Testname: 115T8SP09

1)



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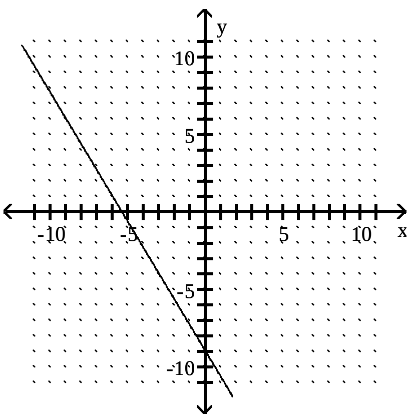


3) $y = 254x + 3129$

4) $f(x) = \frac{2}{5}x + 7$

5) $f(x) = -3x - 15$

6) $f(x) = 5x + 9$

7) $f(x) = 5$

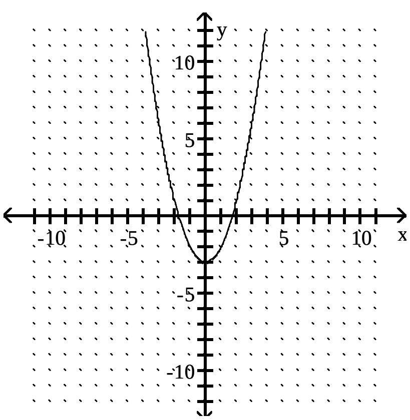
8) $f(x) = 4x - 30$

9) $f(x) = -4x + 11$

10) -5

11) $16.15

12) domain: $(-\infty, \infty)$; range: $(-3, \infty)$



Answer Key
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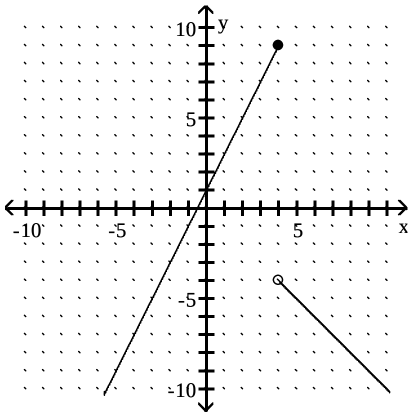
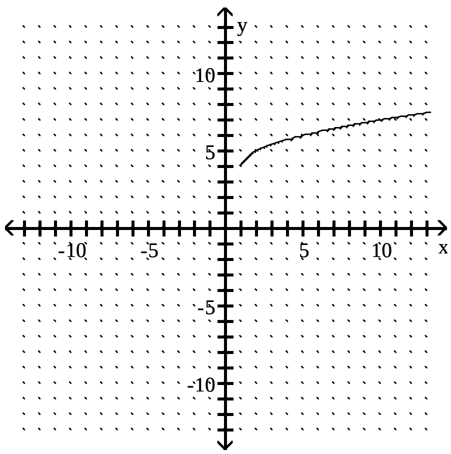
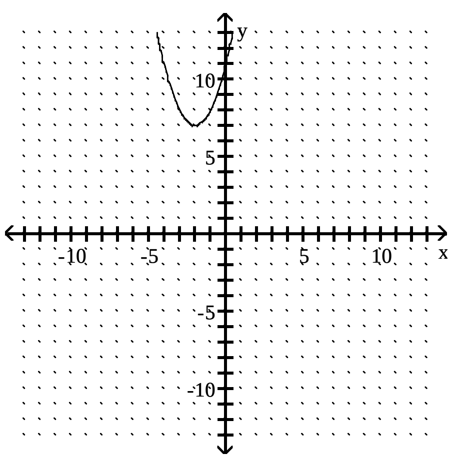
13)



14)



15)



16) 5.5 gallons

17) $y = \frac{54}{x}$

18) 6 feet per second

19) 98 pounds per square inch

20) 3 quarts