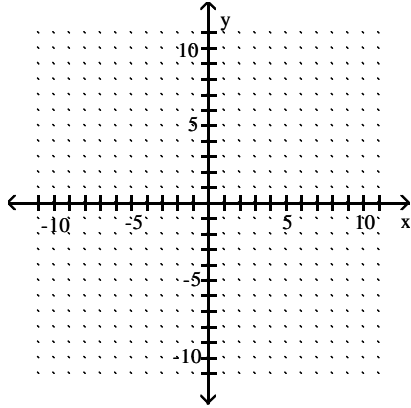


Determine whether the ordered pair is a solution of the given equation.

1)  $y = \sqrt[3]{x} - 6$ ; (36, 0)

Graph the equation.

2)  $y = |x - 2|$

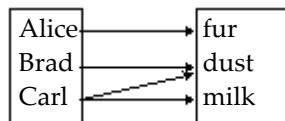


Find the domain and range.

3)  $\{(6, -7), (6, 9), (8, 4), (11, 3), (-6, -3)\}$

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

4) Input: patient                      Output: allergy



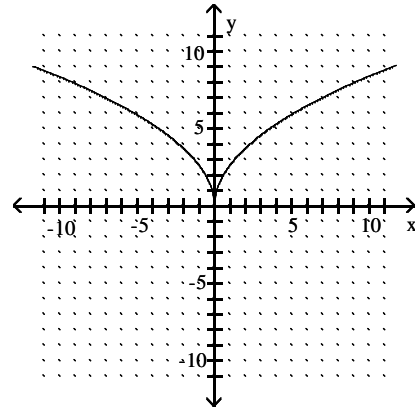
Decide whether the relation defines a function.

5)  $y = x^3$

6)  $x = y^2$

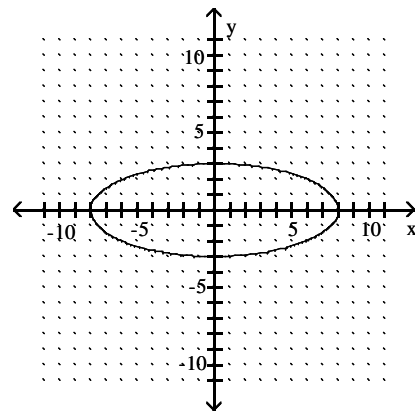
Use the vertical line test to determine whether the graph is the graph of a function.

7)



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.

8)



Find the indicated value.

9) Find  $f(3)$  when  $f(x) = 4x^2 + 5x + 6$

10) Find  $f(3)$  when  $f(x) = -5$

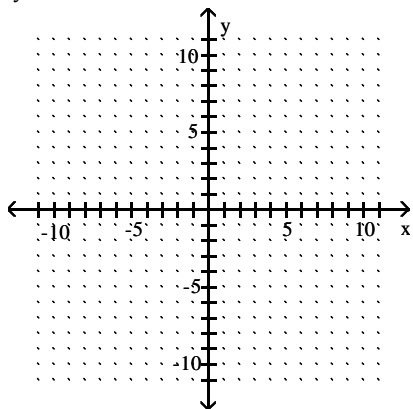
11) Find  $f(4)$  when  $f(x) = 7x^2 + 3x$

Write the equation using function notation.

12)  $-x - 2y = -6$

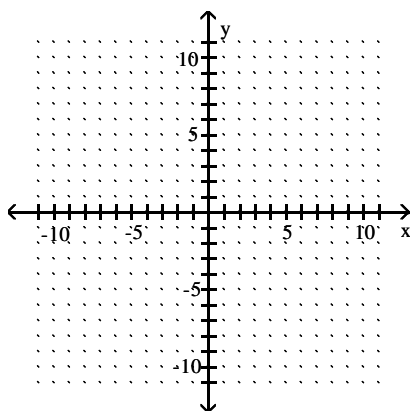
Graph the function by finding x- and y-intercepts.

13)  $x + 3y = -12$



Graph the equation.

14)  $y = 2$



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

15)  $(2, -2), (-2, 9)$

Find the slope of the line.

16)  $2y - 3x = -7$

17)  $f(x) = -2x + 8$

18)  $x = -5$

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

19)  $f(x) = 14x - 7$

$g(x) = \frac{1}{14}x + 9$

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

20) Slope  $-\frac{4}{7}$ ; through  $(4, 5)$

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

21) Through  $(3, -17)$  and  $(5, -31)$

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

22) Slope  $-\frac{4}{9}$ ; through  $(2, 3)$

23) Vertical; through  $(-6, -8)$

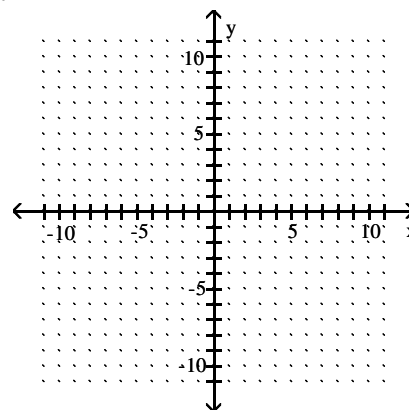
Find an equation of the line. Write the equation using function notation.

24) Through  $(6, 2)$ ; parallel to  $f(x) = 3x - 4$

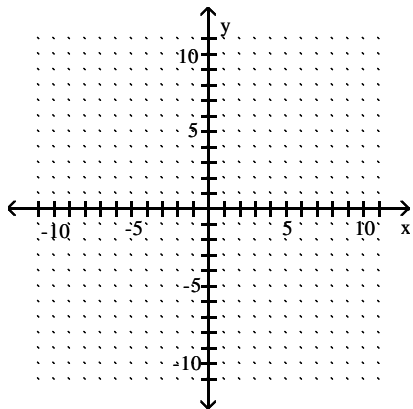
25) Through  $(-4, -5)$ ; perpendicular to  $x - 2y = 2$

Graph the inequality.

26)  $x - y > -5$

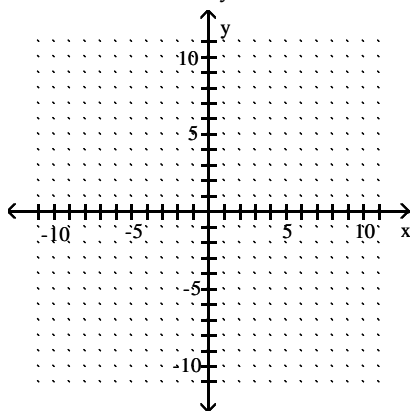


27)  $y \geq 5x$

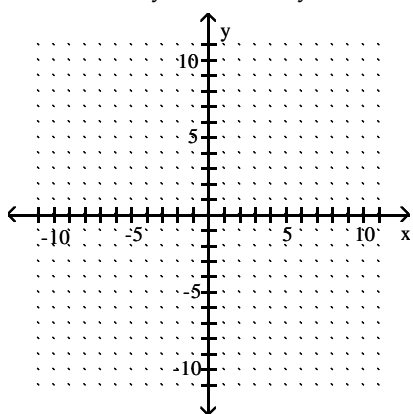


Graph the union or intersection, as indicated.

28) The intersection of  $x - y < -2$  and  $x > -5$



29) The union of  $x + y \leq -3$  or  $x - y \geq -2$



Solve the system of equations by the substitution method.

30) 
$$\begin{cases} x - 6y = -19 \\ 6x - 7y = -27 \end{cases}$$

Solve the system of equations by the elimination method.

31) 
$$\begin{cases} 2x + y = 6 \\ 3x + 2y = 8 \end{cases}$$

Solve the system of equations.

32) 
$$\begin{cases} \frac{3}{5}x + \frac{7}{10}y = \frac{47}{5} \\ 6x + 2y = 104 \end{cases}$$

Solve the system.

33) 
$$\begin{cases} x - y + 4z = 15 \\ 2x + z = 5 \\ x + 3y + z = 20 \end{cases}$$

Solve.

34) One number is 1 less than a second number. Twice the second number is 23 more than 5 times the first. Find the two numbers.

35) A chemist needs 160 milliliters of a 24% solution but has only 14% and 30% solutions available. Find how many milliliters of each that should be mixed to get the desired solution.

Given the cost function,  $C(x)$ , and the revenue function,  $R(x)$ , find the number of units  $x$  that must be sold to break even.

36) 
$$\begin{aligned} C(x) &= 172x + 313,600 \\ R(x) &= 368x \end{aligned}$$

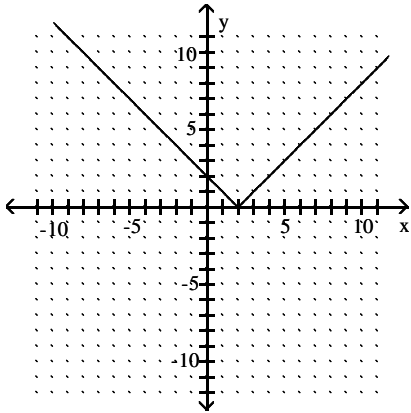
Solve.

37) A vendor sells hot dogs, bags of potato chips, and soft drinks. A customer buys 5 hot dogs, 5 bags of potato chips, and 3 soft drinks for \$20.75. The price of a hot dog is \$1.25 more than the price of a bag of potato chips. The cost of a soft drink is \$3.00 less than the price of two hot dogs. Find the cost of each item.

Answer Key

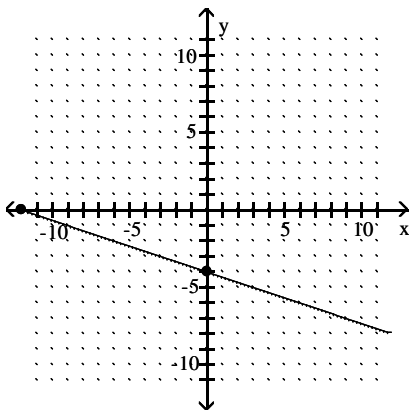
Testname: 1010 TEST 2 REVIEW

- 1) No
- 2)

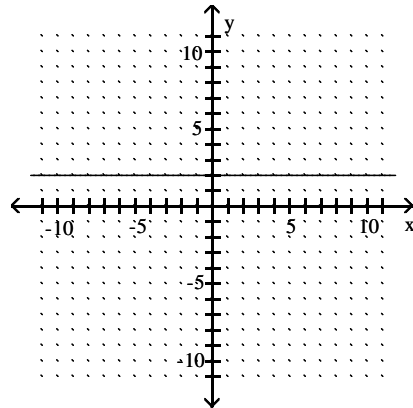


- 3) domain = {8, 11, -6, 6}; range = {4, 3, -3, 9, -7}
- 4) domain: {Alice, Brad, Carl}  
range: {fur, dust, milk}  
not a function
- 5) function
- 6) not a function
- 7) function
- 8) domain: [-8, 8]  
range: [-3, 3]  
not a function
- 9) 57
- 10) -5
- 11) 124
- 12)  $f(x) = -\frac{1}{2}x + 3$

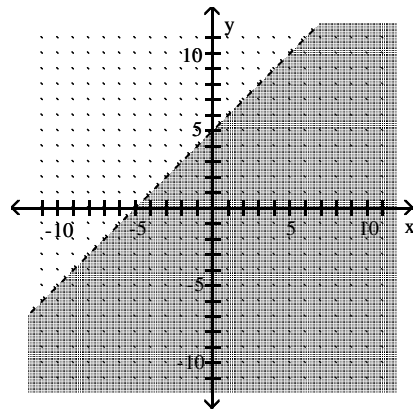
13)



14)



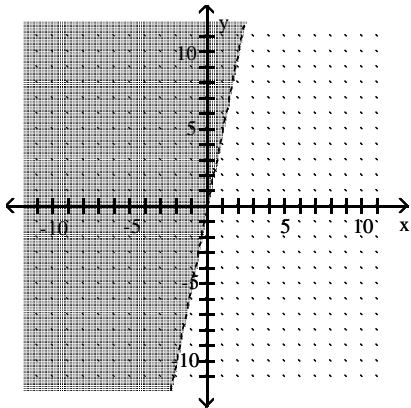
- 15)  $-\frac{11}{4}$
- 16)  $\frac{3}{2}$
- 17) -2
- 18) undefined
- 19) neither
- 20)  $y = -\frac{4}{7}x + \frac{51}{7}$
- 21)  $f(x) = -7x + 4$
- 22)  $4x + 9y = 35$
- 23)  $x = -6$
- 24)  $f(x) = 3x - 16$
- 25)  $f(x) = -2x - 13$
- 26)



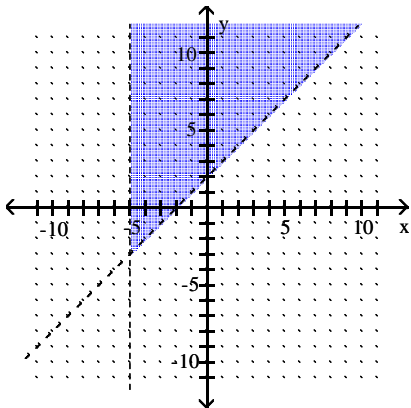
Answer Key

Testname: 1010 TEST 2 REVIEW

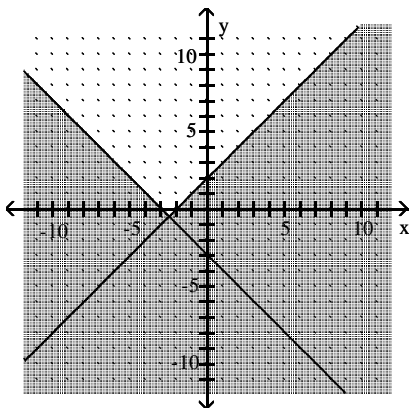
27)



28)



29)



30) (-1, 3)

31) (4, -2)

32) (18, -2)

33) (0, 5, 5)

34) -7 and -6

35) 60 ml of 14%; 100 ml of 30%

36) 1600 units

37) \$2.25 for a hot dog; \$1.00 for a bag of potato chips; \$1.50 for a soft drink