Name_____ Date_____

Determine whether the relation is a function. If the relation is a function, determine whether the function is *linear* or *nonlinear*.

Answers

1. _____

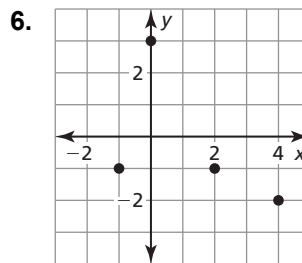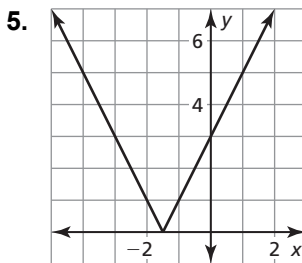**1.**

x	0	2	4	6
y	−8	−3	3	7

2.

x	0	1	2	3
y	−4	−2	0	2

2. _____

3. _____

3. $2y - 4 = 10$

4. $2xy = -8$

4. _____

Find the domain and range of the function represented by the graph. Determine whether the domain is *discrete* or *continuous*.

5. _____

5.

6.

_____

_____

6. _____

_____

_____

7. _____

Evaluate the function when $x = -3$, -2, and 1.

8. _____

7. $g(x) = -x^2 - 7$ **8.** $h(x) = |-2x - 6|$ **9.** $f(x) = \frac{1}{2}x - 1$

9. _____

Find the value of *x* so that the function has the given value.

10. _____

10. $j(x) = 3 - x; j(x) = -5$ **11.** $t(x) = 2x - 4; t(x) = \frac{1}{2}$

11. _____

12. _____

12. $m(x) = -\frac{2}{3}x + 8; m(x) = 2$ **13.** $k(x) = \frac{3}{2}x - 1; k(x) = -4$

13. _____

Find the *x*- and *y*-intercepts of the graph of the linear equation.
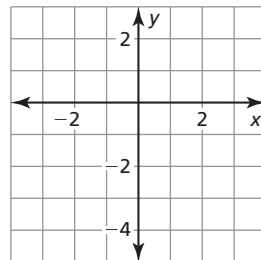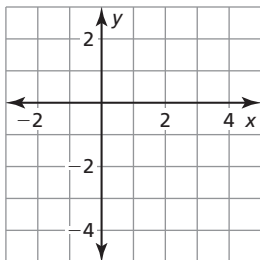
14. _____

14. $2x - 3y = -10$ **15.** $2x + 5y = -8$ **16.** $-4 - x = 14 - 3y$

_____

Graph the linear equation.

15. _____

17. $2x - 3y = 9$ **18.** $-2y - 4 = 4$

_____

16. _____

_____

17. ___See left.___

18. ___See left.___

Chapter 3 **Test B** (continued)

The points represented by the table lie on a line. Find the slope of the line.

Answers

19.

x	1	−4	−3	2
y	3	3	3	3

20.

x	1	3	7	−1
y	−1	2	8	−4

19. _____

20. _____

21. a._____

21. The function $c = 100 + 0.30m$ represents the cost c (in dollars) of renting a car after driving m miles.

    a. Identify the independent and dependent variables.

    b. What would the cost be to rent the car and drive 100 miles?

    c. How many miles would a customer have to drive for the cost to be $149.50?

_____

b._____

c._____

22. _____

Identify the slope, y-intercept, and x-intercept of the graph of the linear equation.
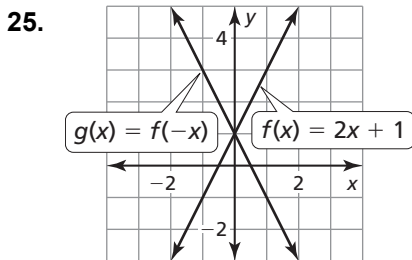
22. $y = -x + 3$ **23.** $4x - 6y = 14$ **24.** $3y + 4 = -10$

_____

_____

23. _____

Use the graphs of f and g to describe the transformation from the graph of f to the graph of g.

25.

$g(x) = f(-x)$ $f(x) = 2x + 1$

26. $f(x) = 2x - 4; g(x) = \frac{1}{2}f(x)$

_____

_____

24. _____

_____

_____

_____

25. _____

27. Your class is raising money by selling boxes of candy. The total cost of the candy is $120 and you charge $8 per box. The class's profit is given by the function $P(x) = 8x - 120$, where x is the number of boxes of candy sold. How does the graph of P change in each situation?

    a. You increase your supply by spending an additional $150 on candy.

    b. You decrease the amount you charge per box of candy to $6.

_____

26. _____

_____

_____

27. a._____

_____

b._____

_____