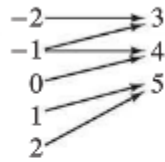
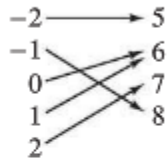
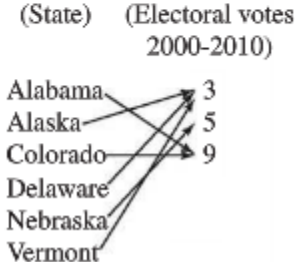
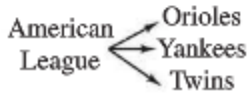
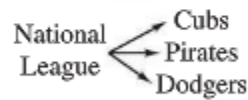


Testing for Functions In Exercises 7–10, does the relation describe a function? Explain your reasoning.

7. Domain Range 8. Domain Range



9. Domain Range 10. Domain Range



Testing for Functions In Exercises 11 and 12, decide whether the relation represents y as a function of x . Explain your reasoning.



11.

Input, x	-3	-1	0	1	3
Output, y	-9	-1	0	1	9

12.

Input, x	0	1	2	1	0
Output, y	-4	-2	0	2	4

Testing for Functions In Exercises 13 and 14, which sets of ordered pairs represent functions from A to B ? Explain.

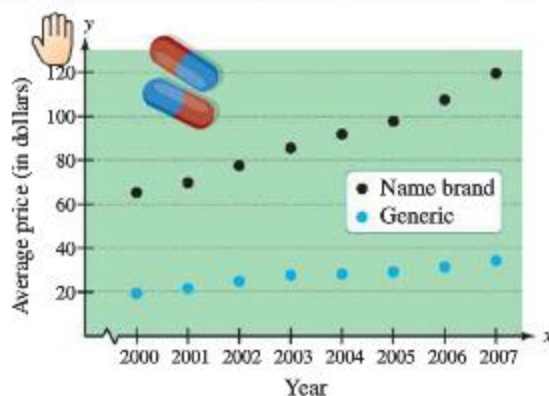
13. $A = \{0, 1, 2, 3\}$ and $B = \{-2, -1, 0, 1, 2\}$

- (a) $\{(0, 1), (1, -2), (2, 0), (3, 2)\}$
- (b) $\{(0, -1), (2, 2), (1, -2), (3, 0), (1, 1)\}$
- (c) $\{(0, 0), (1, 0), (2, 0), (3, 0)\}$

14. $A = \{a, b, c\}$ and $B = \{0, 1, 2, 3\}$

- (a) $\{(a, 1), (c, 2), (c, 3), (b, 3)\}$
- (b) $\{(a, 1), (b, 2), (c, 3)\}$
- (c) $\{(1, a), (0, a), (2, c), (3, b)\}$

Pharmacology In Exercises 15 and 16, use the graph, which shows the average prices of name brand and generic drug prescriptions in the United States. (Source: National Association of Chain Drug Stores)



- Is the average price of a name brand prescription a function of the year? Is the average price of a generic prescription a function of the year? Explain.
- Let $b(t)$ and $g(t)$ represent the average prices of name brand and generic prescriptions, respectively, in year t . Find $b(2007)$ and $g(2000)$.

Testing for Functions Represented Algebraically In Exercises 17–28, determine whether the equation represents y as a function of x .

17. $x^2 + y^2 = 4$

18. $x = y^2 + 1$

19. $y = \sqrt{x^2 - 1}$

20. $y = \sqrt{x + 5}$

21. $2x + 3y = 4$

22. $x = -y + 5$

✓ 23. $y^2 = x^2 - 1$

24. $x + y^2 = 3$

25. $y = |4 - x|$

26. $|y| = 4 - x$

27. $x = -7$

28. $y = 8$

Evaluating a Function In Exercises 29–44, evaluate the function at each specified value of the independent variable and simplify.

29. $f(t) = 3t + 1$

(a) $f(2)$ (b) $f(-4)$ (c) $f(t + 2)$

30. $g(y) = 7 - 3y$

(a) $g(0)$ (b) $g(\frac{7}{3})$ (c) $g(s + 2)$

✓ 31. $h(t) = t^2 - 2t$

(a) $h(2)$ (b) $h(1.5)$ (c) $h(x + 2)$

32. $V(r) = \frac{4}{3}\pi r^3$

(a) $V(3)$ (b) $V(\frac{3}{2})$ (c) $V(2r)$

33. $f(y) = 3 - \sqrt{y}$

(a) $f(4)$ (b) $f(0.25)$ (c) $f(4x^2)$

✓ 39. $f(x) = \begin{cases} 2x + 1, & x < 0 \\ 2x + 2, & x \geq 0 \end{cases}$

(a) $f(-1)$ (b) $f(0)$ (c) $f(2)$

40. $f(x) = \begin{cases} 2x + 5, & x \leq 0 \\ 2 - x^2, & x > 0 \end{cases}$

(a) $f(-2)$ (b) $f(0)$ (c) $f(1)$

✋ 41. $f(x) = \begin{cases} x^2 + 2, & x \leq 1 \\ 2x^2 + 2, & x > 1 \end{cases}$

(a) $f(-2)$ (b) $f(1)$ (c) $f(2)$

Evaluating a Function In Exercises 45–48, assume that the domain of f is the set $A = \{-2, -1, 0, 1, 2\}$. Determine the set of ordered pairs representing the function f .

45. $f(x) = x^2$

46. $f(x) = x^2 - 3$

47. $f(x) = |x| + 2$

48. $f(x) = |x + 1|$

Evaluating a Function In Exercises 49 and 50, complete the table.

49. $h(t) = \frac{1}{2}|t + 3|$

t	-5	-4	-3	-2	-1
$h(t)$					