

Practice 5-2

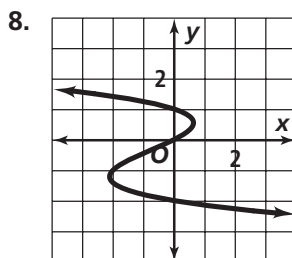
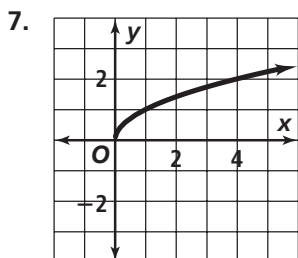
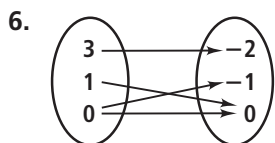
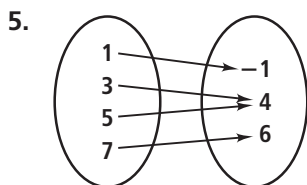
Relations and Functions

Find the domain and range of each relation.

1. $\{(-3, -7), (-1, -3), (0, -1), (2, 3), (4, 7)\}$
2. $\{(-5, -4), (-4, 2), (0, 2), (1, 3), (2, 4)\}$

Determine whether each of the following relations is a function.

3. $\{(-4, -3), (-2, -2), (0, -1), (1, -\frac{1}{2})\}$
4. $\{(0, 0), (1, 1), (4, 2), (1, -1)\}$



Evaluate each function rule for $x = 3$.

9. $f(x) = 2x - 15$
10. $f(x) = -x + 3$
11. $g(x) = \frac{2}{3}x - 1$
12. $h(x) = -\frac{1}{2}x - \frac{1}{2}$
13. $h(x) = -0.1x + 2.1$
14. $g(x) = -\frac{x}{6} + \frac{3}{2}$

Evaluate each function rule for $x = -\frac{1}{2}$.

15. $f(x) = 4x - 2$
16. $f(x) = -\frac{1}{2}x + 1$
17. $g(x) = -|x| + 3$
18. $h(x) = x - \frac{1}{2}$

Find the range of each function for the given domain.

19. $f(x) = -3x + 1; \{-2, -1, 0\}$
20. $f(x) = x^2 + x - 2; \{-2, 0, 1\}$
21. $h(x) = -x^2; \{-3, -1, 1\}$
22. $g(x) = -\frac{1}{2}|x| + 1; \{-2, -1, 1\}$

23. For a car traveling at a constant rate of 60 mi/h, the distance traveled is a function of the time traveled.

- a. Express this relation as a function.
- b. Find the range of the function when the domain is $\{1, 5, 10\}$.
- c. What do the domain and range represent?