

## 5.R.9 Exercises

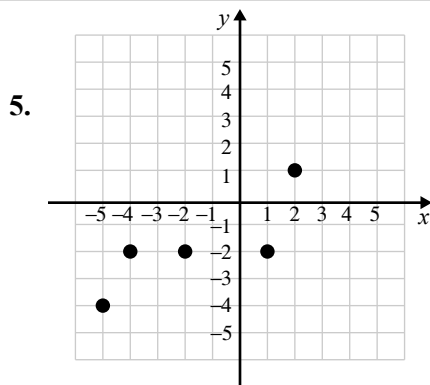
### Concept Check

**True/False.** Determine whether each statement is true or false. If a statement is false, explain how it can be changed so the statement will be true. (**Note:** There may be more than one acceptable change.)

1. If the domain of a linear function is not explicitly stated, the implied domain is the set of all values of  $x$  that produce real values for  $y$ .
2. A relation is a function in which each domain element has exactly one corresponding range element.
3. In a function, the range elements can have more than one corresponding domain element.
4. If  $s = \{(1, -6), (3, 5), (4, 0), (1, 2)\}$ , then  $s$  is a function.

### Practice

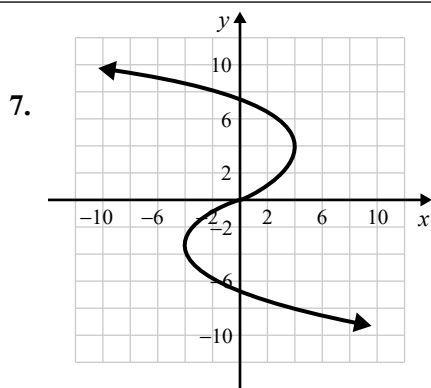
List the sets of ordered pairs that correspond to the points. State the domain and range and indicate if the relation is a function.



Graph the relation. State the domain and range and indicate which of the relation is a function.

6.  $h = \{(1, -5), (2, -3), (-1, -3), (0, 2), (4, 3)\}$

Use the vertical line test to determine whether the graph represents a function. State the domain and range using interval notation.



State the domain of the function.

8.  $h(x) = \frac{7}{3x}$

Find the values of the function as indicated.

9.  $F(x) = 6x^2 - 10$

a.  $F(0)$

c.  $F(4)$

b.  $F(-4)$

## Applications

Solve.

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10. A nurse hangs a 1000-milliliter IV bag which is set to drip at 120 milliliters per hour. Create a model of this situation to represent the amount of IV solution left in the bag after  $x$  hours.
- The  $y$ -intercept is the amount of IV solution in the bag initially (time = 0). What is the  $y$ -intercept?
  - The slope is equal to the rate that the IV solution is dispensed per hour. What is the slope? (**Hint:** Consider whether the amount of IV solution in the bag is increasing or decreasing and how this would affect the slope.)
  - Write an equation in slope-intercept form to model this situation.
  - Write the equation from Part c. using function notation.
  - State the domain and range of the function.
  - State any additional restrictions that should be made on the domain for it to make sense in the context of this problem.
  - How much IV solution is left in the bag after 5 hours?