



### GUIDED PRACTICE

**Vocabulary** Apply the vocabulary from this lesson to answer each question.

- The output of a function is the \_\_\_?\_\_\_ variable. (*independent* or *dependent*)
- An algebraic expression that defines a function is a \_\_\_?\_\_\_. (*function rule* or *function notation*)

**SEE EXAMPLE 1** Determine a relationship between the  $x$ - and  $y$ -values. Write an equation.

$x$	1	2	3	4
$y$	-1	0	1	2

4.  $\{(1, 4), (2, 7), (3, 10), (4, 13)\}$

**SEE EXAMPLE 2** Identify the independent and dependent variables in each situation.

- A small-size bottle of water costs \$1.99 and a large-size bottle of water costs \$3.49.
- An employee receives 2 vacation days for every month worked.

**SEE EXAMPLE 3** Identify the independent and dependent variables. Write an equation in function notation for each situation.

- An air-conditioning technician charges customers \$75 per hour.
- An ice rink charges \$3.50 for skates and \$1.25 per hour.

**SEE EXAMPLE 4** Evaluate each function for the given input values.

- For  $f(x) = 7x + 2$ , find  $f(x)$  when  $x = 0$  and when  $x = 1$ .
- For  $g(x) = 4x - 9$ , find  $g(x)$  when  $x = 3$  and when  $x = 5$ .
- For  $h(t) = \frac{1}{3}t - 10$ , find  $h(t)$  when  $t = 27$  and when  $t = -15$ .

**SEE EXAMPLE 5** 12. A construction company uses beams that are 2, 3, or 4 meters long. The measure of each beam must be converted to centimeters. Write a function to describe the situation. Find the reasonable domain and range for the function.  
(Hint: 1 m = 100 cm)

### PRACTICE AND PROBLEM SOLVING

#### Independent Practice

For Exercises	See Example
13–14	1
15–16	2
17–19	3
20–22	4
23	5

Determine a relationship between the  $x$ - and  $y$ -values. Write an equation.

$x$	1	2	3	4
$y$	-2	-4	-6	-8

14.  $\{(1, -1), (2, -2), (3, -3), (4, -4)\}$

Identify the independent and dependent variables in each situation.

- Gardeners buy fertilizer according to the size of a lawn.
- The cost to gift wrap an order is \$3 plus \$1 per item wrapped.

Identify the independent and dependent variables. Write an equation in function notation for each situation.

- To rent a DVD, a customer must pay \$3.99 plus \$0.99 for every day that it is late.
- Stephen charges \$25 for each lawn he mows.
- A car can travel 28 miles per gallon of gas.

