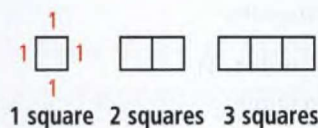## Lesson Check

Do you know HOW?

1. Graph each set of ordered pairs. Use words to describe the pattern shown in the graph.
   a. $(0, 0), (1, 1), (2, 2), (3, 3), (4, 4)$
   b. $(0, 8), (1, 6), (2, 4), (3, 2), (4, 0)$
   c. $(3, 0), (3, 1), (3, 2), (3, 3), (3, 4)$

2. Use the diagram below. Copy and complete the table showing the relationship between the number of squares and the perimeter of the figure they form.

Number of Squares	Perimeter
1	4
2	6
3	■
4	■
10	■
■	62
n	■

1 square   2 squares   3 squares

Do you UNDERSTAND?   © MATHEMATICAL PRACTICES

© 3. **Vocabulary** The amount of toothpaste in a tube decreases each time you brush your teeth. Identify the independent and dependent variables in this relationship.

© 4. **Reasoning** Tell whether each set of ordered pairs in Exercise 1 represents a function. Justify your answers.

© 5. **Reasoning** Does the graph below represent a linear function? Explain.
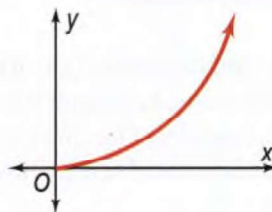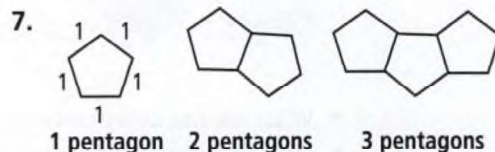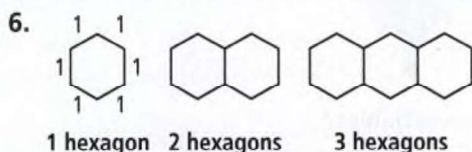

Practice and Problem-Solving Exercises   © MATHEMATICAL PRACTICES

Ⓐ **Practice**   For each diagram, find the relationship between the number of shapes and the perimeter of the figure they form. Represent this relationship using a table, words, an equation, and a graph.

See Problem 1.

6.
1 hexagon   2 hexagons   3 hexagons

7.
1 pentagon   2 pentagons   3 pentagons

For each table, determine whether the relationship is a linear function. Then represent the relationship using words, an equation, and a graph.

See Problem 2.

8.

x	y
0	5
1	8
2	11
3	14

9.

x	y
0	−3
1	2
2	7
3	12

10.

x	y
0	43
1	32
2	21
3	10

For each table, determine whether the relationship is a linear function. Then represent the relationship using words, an equation, and a graph.

11. **Mountain Climbing**

Number of Hours Climbing, x	Elevation (ft), y
0	1127
1	1219
2	1311
3	1403

12. **Grocery Bill**

Number of Soup Cans, x	Total Bill, y
0	$52.07
1	$53.36
2	$54.65
3	$55.94

13. **Gas in Tank**

Miles Traveled, x	Gallons of Gas, y
0	11.2
17	10.2
34	9.2
51	8.2

Ⓑ **Apply**

14. **Gardening** You can make 5 gal of liquid fertilizer by mixing 8 tsp of powdered fertilizer with water. Represent the relationship between the teaspoons of powder used and the gallons of fertilizer made using a table, an equation, and a graph. Is the amount of fertilizer made a function of the amount of powder used? Explain.

15. **Reasoning** Graph the set of ordered pairs $(-2, -3)$, $(0, -1)$, $(1, 0)$, $(3, 2)$, and $(4, 4)$. Determine whether the relationship is a linear function. Explain how you know.

16. **Think About a Plan** Gears are common parts in many types of machinery. In the diagram below, Gear A turns in response to the cranking of Gear B. Describe the relationship between the number of turns of Gear B and the number of turns of Gear A. Use words, an equation, and a graph.
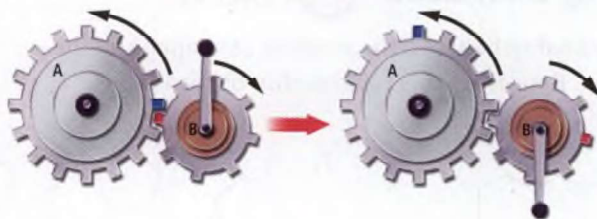
- What are the independent and dependent variables?
- How much must you turn Gear B to get Gear A to go around once?

STEM 17. **Electric Car** An automaker makes a car that can travel 40 mi on its charged battery before it begins to use gas. Then the car travels 50 mi per gallon of gas used. Represent the relationship between the amount of gas used and the distance traveled using a table, an equation, and a graph. Is total distance traveled a function of the amount of gas used? What are the independent and dependent variables? Explain.

18. **Reasoning** Suppose you know the perimeter of n octagons arranged as shown. What would you do to find the perimeter if 1 more octagon was added?

1 octagon   2 octagons   3 octagons