

- 1. Recreation** You ride your bike to the park, sit to read for a while, and then ride your bike home. It takes you less time to ride from the park to your house than it took to ride from your house to the park. Draw a sketch of a graph that shows your possible distance traveled over time. Label each section.
- 2.** Identify the independent and dependent variables in the table below. Then describe the relationship using words, an equation, and a graph.

Speed of Sound in Air				
Temperature (°C)	10	15	20	25
Velocity (m/s)	337	340	343	346

Graph the function shown by each table. Tell whether the function is *linear* or *nonlinear*.

**3.**

x	y
-3	-5
-1	-1
1	3
3	7

**4.**

x	y
0	1
1	2
2	5
3	10

Make a table of values for each function rule. Then graph the function.

**5.**  $y = 1.5x - 3$

**6.**  $y = -x^2 + 4$

Identify the domain and range of each relation. Use a mapping diagram to determine whether the relation is a function.

**7.**  $\{(-2, 5), (8, 6), (3, 12), (5, 6)\}$

**8.**  $\{(9, 6), (3, 8), (4, 9.5), (9, 2)\}$

- 9. Baking** A bottle holds 48 tsp of vanilla. The amount  $A$  of vanilla remaining in the bottle decreases by 2 tsp per batch  $b$  of cookies. Write a function rule to represent this situation. How much vanilla remains after 12 batches of cookies?
- 10. Party Favors** You are buying party favors that cost \$2.47 each. You can spend no more than \$30 on the party favors. What domain and range are reasonable for this situation?

Find the range of each function for the domain  $\{-4, -2, 0, 1.5, 4\}$ .

11.  $f(x) = -2x - 3$       12.  $f(x) = 5x^2 + 4$

Find the second, fourth, and eleventh terms of the sequence described by each rule.

13.  $A(n) = 2 + (n - 1)(-2.5)$   
14.  $A(n) = -9 + (n - 1)(3)$

Tell whether each sequence is arithmetic. Justify your answer. If the sequence is arithmetic, write a function rule to represent it.

15. 128, 64, 32, 16, ...      16. 3, 3.25, 3.5, 3.75, ...

### Do you UNDERSTAND?

**Vocabulary** Tell whether each relationship should be represented by a *continuous* or *discrete* graph.

17. the price of turkey that sells for \$.89 per pound
18. the profit you make selling flowers at \$1.50 each when each flower costs you \$.80
19. **Reasoning** Can a function have an infinite number of values in its domain and only a finite number of values in its range? If so, describe a real-world situation that can be modeled by such a function.
20. **Writing** What is the difference between a relation and a function? Is every relation a function? Is every function a relation? Explain.