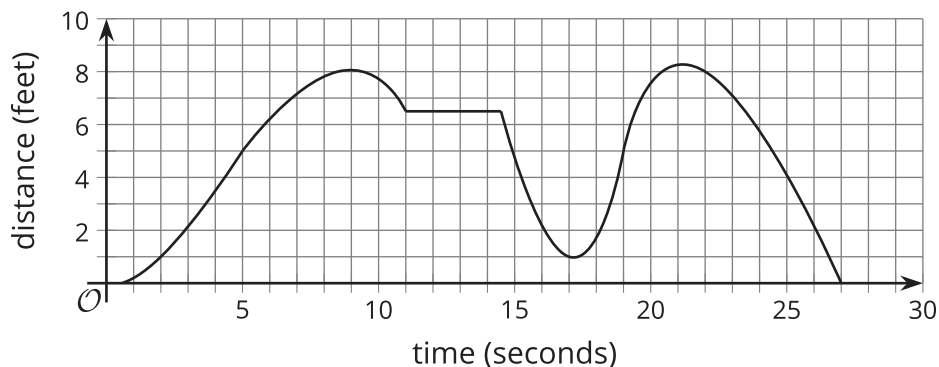


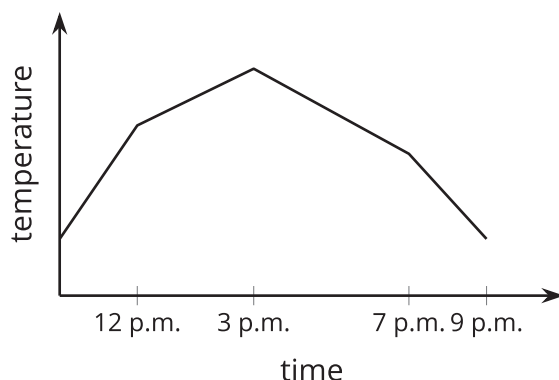
## Lesson 6 Practice Problems

1. This graph represents Andre's distance from his bicycle as he walks in a park.



Decide whether the following statements are true or false.

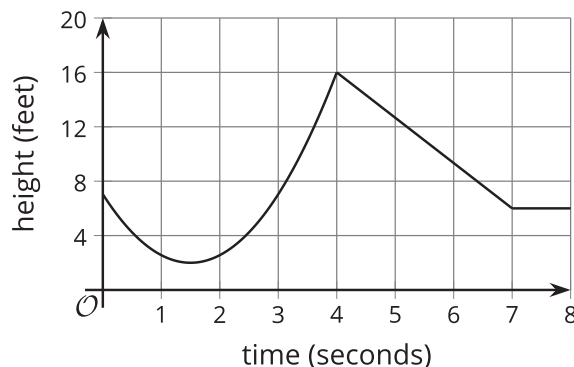
- a. The graph has multiple horizontal intercepts.
  - b. A horizontal intercept of the graph represents the time when Andre was with his bike.
  - c. A minimum of the graph is  $(17, 1)$ .
  - d. The graph has two maximums.
  - e. About 21 seconds after he left his bike, he was the farthest away from it, at about 8.3 feet.
2. The graph represents the temperature in degrees Fahrenheit as a function of time.



Tell the story of the temperature throughout the day.

Identify the maximum and minimum of the function and where the function is increasing and decreasing.

3. Match each feature of the situation with a corresponding statement in function notation.



- |                            |                                     |
|----------------------------|-------------------------------------|
| A. maximum height          | 1. $h(0) = 7$                       |
| B. minimum height          | 2. $h(1.5)$                         |
| C. height staying the same | 3. $h(4)$                           |
| D. starting height         | 4. $h(t) = 6$ for $7 \leq t \leq 8$ |

4. Here are the equations that define three functions.

$$f(x) = 4x - 5$$

$$g(x) = 4(x - 5)$$

$$h(x) = \frac{x}{4} - 5$$

- Which function value is the largest:  $f(100)$ ,  $g(100)$ , or  $h(100)$ ?
- Which function value is the largest:  $f(-100)$ ,  $g(-100)$ , or  $h(-100)$ ?
- Which function value is the largest:  $f(\frac{1}{100})$ ,  $g(\frac{1}{100})$ , or  $h(\frac{1}{100})$ ?

5. Function  $f$  is defined by the equation  $f(x) = x^2$ .

- What is  $f(2)$ ?
- What is  $f(3)$ ?
- Explain why  $f(2) + f(3) \neq f(5)$ .

(From Unit 4, Lesson 4.)

6. Priya bought two plants for a science experiment. When she brought them home, the first plant was 5 cm tall and the second plant was 4 cm. Since then, the first plant has grown 0.5 cm a week and the second plant has grown 0.75 cm a week.
- Which plant is taller at the end of 2 weeks? Explain your reasoning.
  - Which plant is taller at the end of 10 weeks? Explain your reasoning.
  - Priya represents this situation with the equation  $5 + 0.5w = 4 + 0.75w$ , where  $w$  represents the end of week  $w$ . What does the solution to this equation,  $w = 4$  represent in this situation?
  - What does the solution to the inequality  $5 + 0.5w > 4 + 0.75w$  represent in this situation?

(From Unit 2, Lesson 19.)