

## GUIDED PRACTICE

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

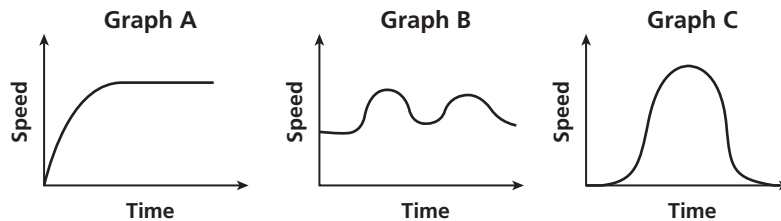
1. A \_\_\_?\_\_\_ graph is made of connected lines or curves. (*continuous* or *discrete*)
2. A \_\_\_?\_\_\_ graph is made of only distinct points. (*continuous* or *discrete*)

### SEE EXAMPLE 1

p. 230

Choose the graph that best represents each situation.

3. A person alternates between running and walking.
4. A person gradually speeds up to a constant running pace.
5. A person walks, gradually speeds up to a run, and then slows back down to a walk.



### SEE EXAMPLE 2

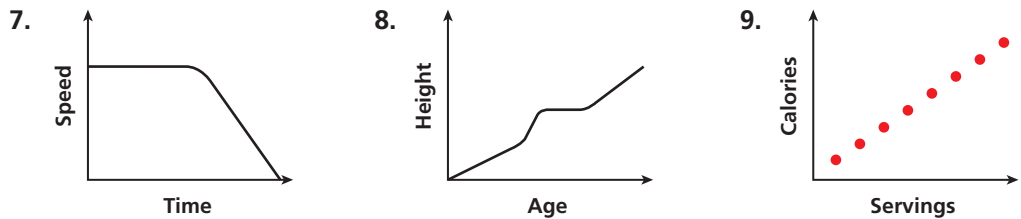
p. 231

6. Maxine is buying extra pages for her photo album. Each page holds exactly 8 photos. Sketch a graph to show the maximum number of photos she can add to her album if she buys 1, 2, 3, or 4 extra pages. Tell whether the graph is continuous or discrete.

### SEE EXAMPLE 3

p. 232

Write a possible situation for each graph.



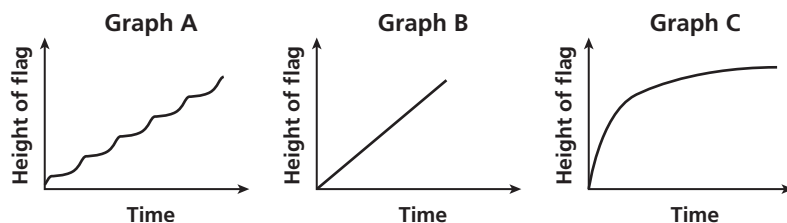
## PRACTICE AND PROBLEM SOLVING

### Independent Practice

For Exercises	See Example
10–12	1
13	2
14–16	3

Choose the graph that best represents each situation.

10. A flag is raised up a flagpole quickly at the beginning and then more slowly near the top.
11. A flag is raised up a flagpole in a jerky motion, using a hand-over-hand method.
12. A flag is raised up a flagpole at a constant rate of speed.

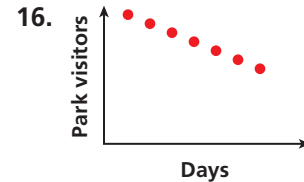
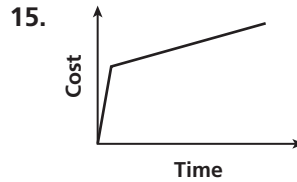
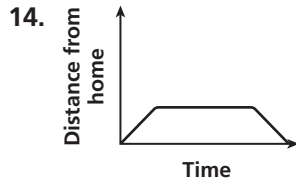


### Extra Practice

Skills Practice p. S10  
 Application Practice p. S31

13. For six months, a puppy gained weight at a steady rate. Sketch a graph to illustrate the weight of the puppy during that time period. Tell whether the graph is continuous or discrete.

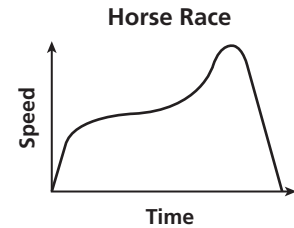
Write a possible situation for each graph.



17. **Data Collection** Use a graphing calculator and motion detector for the following.

- On a coordinate plane, draw a graph relating distance away from a starting point walking at various speeds and time.
- Using the motion detector as the starting point, walk away from the motion detector to make a graph on the graphing calculator that matches the one you drew.
- Compare your walking speeds to each change in steepness on the graph.

18. **Sports** The graph shows the speed of a horse during and after a race. Use it to describe the changing pace of the horse during the race.



19. **Recreation** You hike up a mountain path starting at 10 A.M. You camp overnight and then walk back down the same path at the same pace at 10 A.M. the next morning. On the same set of axes, graph the relationship between distance from the top of the mountain and the time of day for both the hike up and the hike down. What does the point of intersection of the graphs represent?

20. **Critical Thinking** Suppose that you sketched a graph of speed related to time for a brick being dropped from the top of a building. Then you sketched a graph for speed related to time for a ball that was rolled down a hill and then came to rest. How would the graphs be the same? How would they be different?



21. **Write About It** Describe a real-life situation that could be represented by a graph that has distinct points. Then describe a real-life situation that could be represented by a connected graph.

**LINK**

**Sports**



On November 1, 1938, the underdog Seabiscuit beat the heavily favored Triple-Crown winner War Admiral in a historic horse race at Pimlico Race Course in Baltimore, Maryland.

**MULTI-STEP TEST PREP**

22. This problem will prepare you for the Multi-Step Test Prep on page 260.

A rectangular pool that is 4 feet deep at all places is being filled at a constant rate.

- Sketch a graph to show the depth of the water as it increases over time.
- The side view of another swimming pool is shown. If the pool is being filled at a constant rate, sketch a graph to show the depth of the water as it increases over time.

