Name _____ Class _____ Date _____

Chapter 11 Motion

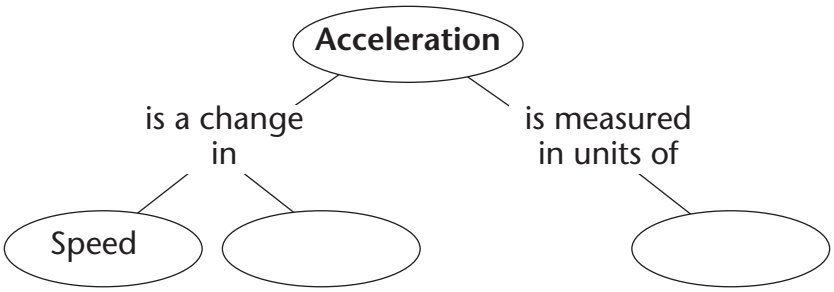
Section 11.3 Acceleration

(pages 342–348)

This section describes the relationships among speed, velocity, and acceleration. It discusses examples of these concepts. It also shows sample calculations of acceleration and graphs representing accelerated motion.

Reading Strategy (page 342)

Summarizing Read the section on acceleration. Then complete the concept map to organize what you know about acceleration. For more information on this Reading Strategy, see the **Reading and Study Skills** in the **Skills and Reference Handbook** at the end of your textbook.



What Is Acceleration? (pages 342–345)

1. The rate at which velocity changes is called _____.
2. Circle the letter for each way an object can accelerate.

   a. change in speed
   b. change in velocity
   c. change in direction

3. Circle the letter of the correct answer. A horse on a carousel that is moving at a constant speed is accelerating because _____.

   a. its direction constantly changes
   b. its speed constantly changes
   c. its height constantly changes

Calculating Acceleration (pages 345–346)

4. Circle the letter of the equation used to calculate the acceleration of an object.

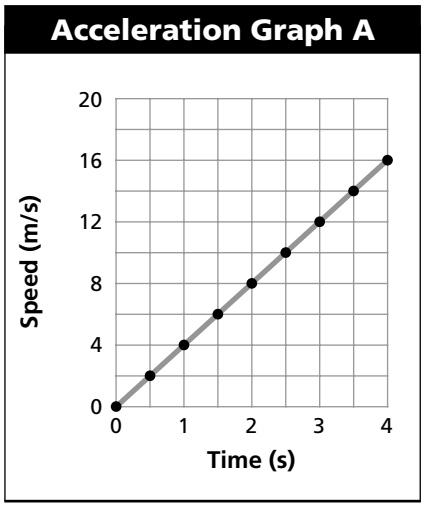
   a. acceleration = change in velocity
   b. acceleration = change in velocity/total time
   c. acceleration = total time/change in velocity

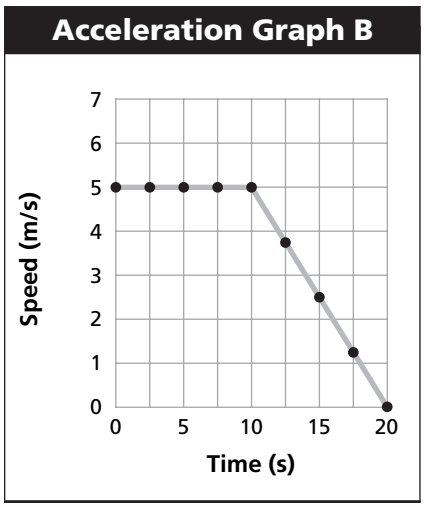
5. Is the following sentence true or false? When the final velocity is less than the initial velocity of an object, the acceleration is negative.

_____

Graphs of Accelerated Motion (pages 346–348)

For questions 6 through 9, refer to the graphs below.





6. Graph A represents the motion of a downhill skier. How fast was the skier moving after traveling down the hill for 2.5 seconds? _____

7. In which graph does an object move at constant speed during the first 4 seconds? _____

8. Is the following sentence true or false? If Graph B represents the motion of a mountain biker, then the biker's speed at times of 10 s is 5 m/s.

_____

9. Graph B represents the motion of a mountain biker. Determine the biker's acceleration during the 10 second to 20 second time period.

Show your work. _____

_____

Instantaneous Acceleration (page 348)

10. The measure of how fast a velocity is changing at a specific instant is known as _____. Circle the correct answer.

a. average acceleration
b. constant acceleration
c. instantaneous acceleration