Chapter 13 Quiz

Part A: Modified True/False

Indicate in the left-hand column whether each statement is true or false. If the statement is false, change the statement to make it true.

- ____ 1. Acceleration is defined as the rate of change of displacement. _____
- ____ 2. An object whose final velocity is less than its initial velocity has a negative acceleration. ____
- ____ 3. Instantaneous acceleration is the change in velocity of an object over a period of time. ____

Part B: Completion

Complete each of the following sentences.

- 4. When an object is falling, air resistance acts against the force of gravity, and the acceleration of the object eventually reaches zero. At this point the object has reached ______ velocity.
- 5. When air resistance is negligible, the downward motion of a falling object is known as ______.
- 6. The acceleration due to gravity at or near the surface of Earth is ______.

Part C: Multiple Choice

Circle the letter beside the answer that best answers the question.

7. What is the acceleration of a car that goes from 88 km/h to 32 km/h in 12.4 s?

A.
$$+1.3 \text{ m/s}^2$$

C.
$$+4.5 \text{ m/s}^2$$

B.
$$-1.3 \text{ m/s}^2$$

D.
$$-4.5 \text{ m/s}^2$$

- 8. After accelerating at 6.0 m/s² [N] for 1.5 s, a train is travelling at 22 m/s [N]. What was the initial velocity of the train?
 - A. 9 m/s [N]

B. 13 m/s [N]

- D. 31 m/s [N]
- 9. A line of best fit is drawn through the data on a velocity–time graph. The velocity is positive, and the line of best fit is straight and sloped downward. Which is the best description of the acceleration?
 - A. positive and constant

- C. negative and constant
- B. positive and increasing
- D. negative and decreasing

Chapter 13 Quiz (continued)

- 10. A person standing on a bridge throws a rock down toward the water. The rock's velocity is 34 m/s downward when it hits the water 1.6 s later. Assuming no air resistance, what was the rock's velocity when it left the person's hand?
 - A. 18 m/s downward

C. 36 m/s downward

Date:

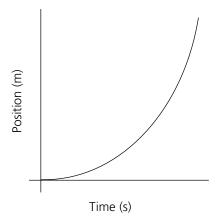
B. 32 m/s downward

- D. 50 m/s downward
- 11. A rock falls off a cliff and hits the ground 2.3 s later. Assuming no air resistance, what is the rock's velocity when it hits the ground?
 - A. 2.3 m/s downward

C. 23 m/s downward

B. 4.3 m/s downward

- D. 43 m/s downward
- 12. Use the graph below to answer the question.



What would a velocity-time graph for the motion of the same object look like?

- A. straight line, horizontal
- C. straight line, sloped upward
- B. curved line, sloped upward
- D. straight line, sloped downward

Part D: Short Answer

13. The principles of acceleration can be used to describe a variety of real-world motions. Give an example of how acceleration applies to straight-line motion in everyday life. For your given example, describe how the object's displacement, velocity, and acceleration change, or if they are constant.