Name _____ Date _____ Class _____

Note-taking Worksheet

Motion, Acceleration, and Forces

Section 1 Describing Motion

A. _____ occurs when an object changes its position.

1. Motion is _____ relative to a reference frame, a group of objects that are not moving _____ to each other. An object's _____ is its distance and direction relative to one _____ point in the reference frame.
2. _____ is the length of the path an object travels.
3. _____ is the distance and direction of an object's final _____ from its initial position.
   a. A _____ is a physical quantity that includes both size and direction.

B. _____ the distance an object travels per unit of time, is measured as _____ per second (m/s) in SI units.

1. Calculation: *speed* = _____ */time*
2. Speed _____ as an object moves from one place to another.
3. _____ is speed at a single instant in time.
   a. Car _____ measure instantaneous speed.
4. _____ is how quickly an object moved over the entire _____ it traveled.
   a. To calculate it, _____ total distance by the total travel time.

C. _____ is the speed of an object and its direction of motion.

1. Like displacement, it is a vector that has _____, which is the object's speed, and has a direction.
2. Velocity can _____ if the speed and / or direction of the object changes, can change if the speed of the object remains _____.

D. A_____-_____ *graph* shows the motion of an object over a period of time.

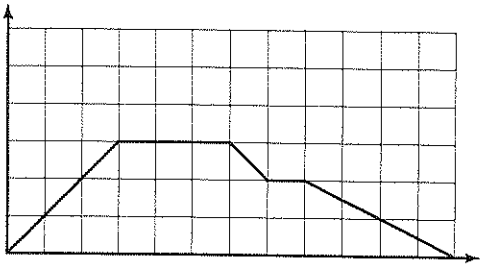
1. We plot time on a(n) horizontal _____ and distance on a(n) _____ axis.
2. On the graph speed is represented by the _____, or steepness, of the line.

Meeting Individual Needs

Name Date Class

SECTION 1 Reinforcement

Describing Motion



Directions: *The distance-time graph above shows the motion of a student walking to a convenience store for a loaf of bread and returning home. Use the graph to answer questions 1 through 5.*

1. In which segment was the student moving at the slowest speed? _____
2. Which segment indicates that the student might be stopped at the convenience store? _____
3. In which two segments was the student moving at the fastest speed? _____
4. In which segment might the student be waiting for a traffic light? _____
5. Which took longer, walking to the store or walking home? _____

Directions: *Find the mistakes and omissions in the statements below. Rewrite each statement correctly on the lines provided.*

6. You can tell an object has moved because its velocity has changed.

_____

7. Displacement is how far an object moves.

_____

8. Average speed is indicated on the speedometer.

_____

9. A vertical line on a distance-time graph indicates that an object is stationary.

_____

_____

10. Speed is calculated by multiplying the time of travel by the distance traveled.

_____

11. A race car driving around a track at 240 km/h has a constant velocity.

_____

Meeting Individual Needs