

## Key Terms

**acceleration** the rate at which velocity changes

**average speed** distance traveled divided by time during which motion occurs

**average velocity** displacement divided by time over which displacement occurs

**dependent variable** the variable that changes as the independent variable changes

**displacement** the change in position of an object against a fixed axis

**distance** the length of the path actually traveled between an initial and a final position

**independent variable** the variable, usually along the horizontal axis of a graph, that does not change based on human or experimental action; in physics this is usually time

**instantaneous speed** speed at a specific instant in time

**instantaneous velocity** velocity at a specific instant in time

**kinematics** the study of motion without considering its causes

**magnitude** size or amount

**position** the location of an object at any particular time

**reference frame** a coordinate system from which the positions of objects are described

**scalar** a quantity that has magnitude but no direction

**speed** rate at which an object changes its location

**tangent** a line that touches another at exactly one point

**vector** a quantity that has both magnitude and direction

**velocity** the speed and direction of an object