**Name:**

**Date:**

**School:**

**Facilitator:**

5.02 Speed and Velocity Questions

**Complete the following 11 questions about speed, velocity, and acceleration.**

# ****Part 1: Speed and Velocity****

1. Can the displacement of an object be greater than the distance traveled? Explain.
2. Compare and contrast average speed and constant speed.

1. While driving in your car, can your instantaneous speed be greater than your average speed? Explain.

1. Describe a NASCAR vehicle’s velocity as it goes around a track at constant speed.

1. Why do cities have speed limit signs instead of velocity limit signs?

1. Describe the motion of a car that has an acceleration of 0 m/s2.

1. Describe your acceleration as you skate down your neighborhood sidewalk.

# Part 2: Calculations

**Solve the following problems. Be sure to show your work.**

1. A motorcycle is moving at a constant speed of 90 km/h. How long does it take the motorcycle to travel a distance of 100 km?

1. The world’s fastest elevator is in Taipei, Taiwan. It can lift passengers 1,010 m in 39 s. What is the speed of this elevator?

1. Evelyn walked to the store a distance of 1.6 km in 30 min. What is her average speed in m/s?

1. An airplane starts at rest and accelerates down the runway for 25 s. At the end of the runway, its final velocity is 75 m/s east. What is its acceleration?