**Measuring Motion** (p. 365 – 371)

**I. Observing Motion**

**1. Define the term motion.**

Motion –

**2. Define the term frame of reference.**

Frame Of Reference –

**3. When does motion occur?**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**4. Differentiate between the following terms.**

Distance : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Displacement : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**5. What would your total displacement be if you walked from your front door, around the**

**block, and then stopped when you reach your front door again?**

a. one block

b. two blocks

c. the entire distance of your trip

d. zero

**II. Speed & Velocity**

**1. Differentiate between the following terms.**

Speed : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Velocity : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**2. Circle the letter of each sentence that describes a change in velocity.**

a. A moving object gains speed.

b. A moving object changes direction.

c. A moving object moves in a straight line at a constant speed.

d. A moving object slows down.

**3. If a car travels around a gentle curve on a highway at 60 km / hr, the velocity does not**

**change.**

Circle One : True False

**4. On a graph, which directions indicate :**

Positive Displacement : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Negative Displacement : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**5. If a school bus is traveling 8 m/s to the east and you walk 3 m/s toward the east, what is**

**you velocity relative to :**

The Bus (Walking Forward) : \_\_\_\_\_\_ m/s The Road (Walking Forward) : \_\_\_\_\_\_ m/s

The Bus (Walking To The Back) : \_\_\_\_\_\_ m/s The Road (Walking To The Back) : \_\_\_\_\_\_ m/s

The Bus (Standing Still) : \_\_\_\_\_\_ m/s The Road (Standing Still) : \_\_\_\_\_\_ m/s

**III. Calculating Speed**

**1. Write out the equation to determine speed.**

Speed = *v* =

**2. The SI units for speed are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**3. Differentiate between the following terms.**

Average Speed : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Instantaneous Speed : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**4. What type of speed does an automobile’s speedometer display?**

Circle One : Average Speed Instantaneous Speed

**5. If an object is moving at a constant speed, the average speed does not change.**

Circle One : True False

**IV. Graphing Motion**

**1. What is the object doing according to the following graphs. *The vertical y-axis represents***

***distance and the horizontal x-axis represents time.***

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_