**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.***

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