**Acceleration** (p. 372 – 377)

**I. Acceleration & Motion**

 **1. Define the term acceleration.**

 Acceleration –

 **2. Which of the following produces acceleration?**

 a. A change in speed.

 b. A change in direction.

 c. A change in both (speed & direction).

 d. None of the above.

 **3. Acceleration is the result of increases or decreases in speed.**

 Circle One : True False

 **4. Define the term centripetal acceleration.**

 Centripetal Acceleration –

 **5. Why is a horse carousel, which is moving at a constant speed, accelerating?**

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

 **8. What is the direction of acceleration when moving with circular motion?** *(Not in the book.)*

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

**II. Calculating Acceleration**

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

 Acceleration = *a* =

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

 **3.** **A skateboarder begins down a ramp at a speed of 1.0 m/s. After 3.0 seconds, her speed**

 **has increased to 4.0 m/s. Calculate her acceleration.**

 a. 1.0 meter / second2

 b. -3.0 meters / second2

 c. 5.0 meters / second2

 d. -9.8 meters / second2

 **Is this considered to be positive or negative acceleration?**

 Circle One : Positive Acceleration Negative Acceleration

 **4. A mountain biker approaches a hill 10 seconds into her race. She starts up the hill at a**

 **speed of 5 m/s and she stops at the top of the hill at a time of 20 seconds into the race at a**

 **speed of 0 m/s. Calculate her acceleration.**

 a. -0.5 meter / second2

 b. 1.0 meters / second2

 c. -2.0 meters / second2

 d. 2.0 meters / second2

 **Is this considered to be positive or negative acceleration?**

 Circle One : Positive Acceleration Negative Acceleration

**III. Graphing Accelerated Motion**

 **1. What are three ways to maintain zero acceleration?**

 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **2. How can a rollercoaster exhibit constant acceleration?**

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

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

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

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

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

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

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