**Motion Review Problem Set 2**

**Directions:** Please solve the following problems below. Remember to always setup your problem accordingly. First, write the formula. Second write out your known variables. Third, plug in the known variables into the formula. SHOW ALL WORK (adding, subtracting, dividing, etc.) The last step is writing your correct answer with the correct units. If you are handwriting your answers to turn in make sure you either circle or box your final answer.

**Acceleration Practice:**

1. During a race, a sprinter increases from 5.0 m/s to 7.5 m/s over a period of 1.25 s. What is the sprinter’s average acceleration during this period?
2. A runner went from 6 m/s to 2 m/s in 2 seconds, what was his acceleration?
3. A ball rolls down a ramp for 15 seconds.  If the initial velocity of the ball was 0.8 m/s and the

final velocity was 7 m/s, what was the acceleration of the ball?

1. A car going 50mph accelerates to pass a truck. Five seconds later the car is going 80mph. Calculate the acceleration of the car.
2. A dragster in a race accelerated from stop to 60 m/s by the time it reached the finish line. The

dragster moved in a straight line and traveled from the starting line to the finish line in 8.0 seconds. What was the acceleration of the dragster?

1. A roller coaster’s velocity at the top of a hill is 10 m/s. Two seconds later it reaches the bottom of the hill with a velocity of 26 m/s. What was the acceleration of the coaster?
2. How long will it take a car to go from a complete stop to 44 km/hr if they are accelerating at 5 km/hr2?
3. How long will it take a car to accelerate from 15.2 m/s to 23.5 m/s if the car has an average acceleration of 3.2 m/s2?
4. If a train going 60 m/s hits the brakes, and it takes the train 1 minute 25 seconds to stop, what is the train’s acceleration?
5. A child drops a ball from a window. The ball strikes the ground in 3.0 seconds. What is the velocity of the ball the instant before it hits the ground?