Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Physics 11

**Worksheet 2.7**

**More of “The Big Three”**

1. A bullet strikes a poodle at 230 m/s. If the poodle is 15 cm wide and the bullet decelerates at 1200 m/s2 as it passes through the poodle, how long does the bullet spend inside the poor puppy?

1. If a sprinter accelerates from rest at a constant rate of 4 m/s2, how long does it take them to cover 10 m?
2. A rocket truck accelerates from rest at 8 m/s2 straight into a wall. It takes 4 seconds for the truck to hit the wall. If the crumple zone in the truck compresses by 1 m, what was the truck’s acceleration as it crumpled?

1. An object traveling at 13 m/s east experiences an acceleration of 9 m/s2 west for an unknown period of time. After this period of time, the object’s displacement is 8 m to the east. What is the object’s velocity?

Answers: 1) 0.00065 seconds 2) 2.24 s 3) 512 m/s2 backwards   
4) Impossible to tell, but speed is 5 m/s