**Physics**

**FA6.2 - Conservation of Momentum**

Name

Driving Pet Peeve

1. A bullet going 481 m/s imbeds in a stationary block of wood. The bullet and block combo are going 5.27 m/s after the collision, and the combo has a mass of 12.1 kg (Bullet and block). What was the **mass** of the bullet? (0.133 kg)

2. A 65 kg person dives 3.68 m/s to the right off of a 23 kg cart. What is the velocity of the cart if the cart and person were initially at rest? (10. m/s to the left)

3. 68 kg-Francois running 7.8 m/s jumps on a 45.3 kg cart already rolling at 2.3 m/s in the same direction. What speed are they going after he jumps on? (5.6 m/s)

4. A 1240 kg Toyota Camry going 12.0 m/s to the east, strikes a 2530 kg SUV going west at 16.3 m/s. What is the velocity of the wreckage after the collision? (6.99 m/s to the west)

5. A 65 kg person is riding a 23 kg cart to the right at 3.15 m/s. What speed must he dive off the cart, and in what direction, to give the cart a velocity of 22.3 m/s to the right? (3.6 m/s to the left)