**IB Physics**

**FA7.2 - Conservation of Momentum**

Name

Driving Pet Peeve

When you have finished this, go to the website and check your answers. If you got a problem wrong, cross it off on the front, and do it correctly on the back.

**Show your work, and circle your answers and use sig figs to receive full credit.**

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?

2. A 65.0 kg person dives 3.68 m/s to the right off of a 23.0 kg cart. What is the velocity of the cart if the cart and person were initially at rest?

3. 68.0 kg-Francois running 7.80 m/s jumps on a 45.3 kg cart already rolling at 2.30 m/s in the same direction. What speed are they going after he jumps on?

4. Bumper car A (340 Kg) with going East collides with the rear of car B (550 Kg) which has a velocity of 2.4 m/s East. After the collision, car A has a velocity of 1.2 m/s to the West, and B has a velocity of 5.40 m/s to the East. What is the velocity of car A before the collision?

5. 94.0 kg Thor is standing on a 41.0 kg cart, and is holding a 6.40 kg hammer. Everything is moving to the right at 1.30 m/s. After he throws the hammer, he is moving 3.70 m/s to the right. What speed and in what direction did he throw the hammer?