

Name _____

1. A 6.50 g bullet imbeds in a stationary 89.0 g block of wood. The bullet and block combo are going 24.0 m/s after the collision. What was the **velocity** of the bullet before the collision?
2. A 62.0 kg person fires a 4.50 g rifle shell at 780. m/s. If the person is initially at rest on a frictionless surface, what is their recoil **velocity** after firing?
3. A 3750 kg car going 24.0 m/s strikes a 1740 kg car traveling in the same direction at 17.0 m/s from behind. The two cars stick together. What **velocity** are they going after the collision?
4. Bumper car A (624. Kg) with velocity 2.80 m/s East collides with the front of car B (518. Kg) which has a velocity of 3.20 m/s West. After the collision, car A has a velocity of 1.70 m/s to the West. **What is the velocity of car B after the collision?** (Speed and direction)
5. 115 kg Thor is standing on a 43.0 kg cart, and is holding a 7.30 kg hammer. Everything is moving to the right at 2.10 m/s. After he throws the hammer, he and the cart are moving 1.40 m/s to the right. What **speed and in what direction** did he throw the hammer?