Physics
Warmup Quiz 23

Name_____

1. A 0.144 Kg baseball going 41.0 m/s, strikes a bat, and heads straight **back** to the outfield at 67.0 m/s. If the bat is in contact with the ball for 0.0120 s, what is the force it exerts on the ball?

2. A rocket engine develops 11.7 N of force with an exhaust velocity of 830. m/s. What is the fuel burn rate in kg/s?

3. A 50.0 kg rocket, 40.0 kg of which is fuel, burns 2.30 kg of fuel per second with an exhaust velocity of 810. m/s. What are its initial and final acceleration as it takes off from earth?

4. A 5.1 gram bullet going 620 m/s strikes a 187 g block of wood at rest on a frictionless surface. What is the velocity of the bullet and the block after it sticks in the block?

5. 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)