Name _____ Hour _____

Extra Momentum Problems:

1. A 1500 kg car moving with a velocity of 15 m/s collides with a pole and is brought to rest in 0.65 sec. Find the force exerted on the car during the collision. (-34,615 N)

2. Find the momentum of a 2250 kg truck moving with a velocity of 65 mph. (65,366 kgm/s)

3. What velocity must a car with a mass of 1250 kg have in order to have the same momentum as the truck in problem #2? (52.3 m/s)

4. Which has more momentum, a 1500 kg car traveling at 60 mph, or a 2000 kg car traveling at 75 mph?

5. Calculate the impulse needed to stop a 1.2 kg water balloon if it is initially traveling at 10 m/s. (-12 kg m/s)

6. Mr. Percival (75 kg) is cruising down the freeway at 60 miles per hour.
    a. Calculate the force it would take to stop him if he crashed and slammed into his air bag so that it took him 1.2 seconds to stop. (-1675 N)

    b. How many g's would he experience in the crash? (2.28 g's)

7. A pitcher claims he can throw a 0.145 kg baseball with as much momentum as a speeding bullet. Assume that a 3.0 g bullet moves at a speed of 1,500 m/s. What must the baseball's speed be for the pitcher's claim to be valid? *(31 m/s)*

8. Rudolf drops a 0.25 kg bell from his collar. How much momentum will it have after falling for 13.8 meters? (-4.1 kgm/sec)