**IB Physics**

**FA7.1 - Impulse and Momentum**

Name

School 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 rocket exerts 10.3 N of force for 2.23 seconds. What **impulse** does it impart?

2. A 17.5 N unbalanced force is exerted on a 67.1 Kg mass for 37.2 seconds. What is the change of **velocity** of the mass?

3. A 0.142 Kg baseball going 41.0 m/s, strikes a bat, and heads straight **back** to the outfield at 53.0 m/s. If the bat exerted a force of 2350 N, for what **time** was it in contact with the bat?

4. A rocket engine burns fuel at a rate of 53.5 grams per second, and develops a force of 65.2 N. What must be the exhaust **velocity**? (1000 grams = 1 kg)

5. A 60.0 kg rocket, 48.0 kg of which is fuel, burns 2.15 kg of fuel per second with an exhaust velocity of 982 m/s. What are its initial and final acceleration as it takes off from earth?

optional: For what time do the engines burn? What is its acceleration at t = 10.0 s? Make a graph of the acceleration.