IMPULSE AND MOMENTUM Name: ______________________

1. Calvin is walking down the street at [illegible]. If he has a mass of 70 kg, what is his momentum? (Caution: watch units!)

2. How fast must a 30.0kg child be moving on her tricycle to have the same momentum as a 1.20×10^3kg car traveling at [illegible]?

3. On April 15, 1912, the luxury cruise liner Titanic sank after running into an iceberg.

   a) What momentum would the [illegible] kg ship have imparted to the iceberg if it hit it head on with a speed of [illegible]? (In reality it was a glancing blow.)

   b) If the captain of the ship had seen the iceberg a kilometer ahead and had tried to slow down, use the idea of impulse to explain why would this have been a futile effort?

4. Auto companies frequently test the safety of automobiles by putting them through crash test to observe the integrity of the passenger compartment. If a 1.00×10^3kg car is sent towards a cement wall with a speed of [illegible], and the impact stops the car in [illegible] s, with what force was it brought to rest?