Impulse and Momentum

1. What velocity will a 40.0-kg child sitting in a 5.0-kg wagon move if pushed from rest by a 75 N force for 2.0s.

2. What average force will stop a 1000-kg car in 1.5 s if the car is initially moving at 22m/s?

3. What is the momentum of 75.0-kg object moving at the velocity of 10m/s [left]?

4. What force is required to stop a 1500-kg object over 0.30 s if the object initially moves at the velocity of 15m/s [right]?

5. What is the impulse applied to 0.2-kg object moving at velocity 70m/s [right] that initially moved at velocity 30 m/s [right]?

6. What force was needed to create the impulse in #5 provided the force was exerted for 4.5×10^{-3} s?

7. Consider a 0.06-kg object initially at rest. This object is acted upon by a force of 250N over 0.05s.

a) Find the impulse.

b) Find the final velocity of the object.