



## Analysis of the Crash Cart Lab; Momentum and Impulse

1. Eli is subjected to a crazy physics experiment and is hurled down the hallway on two very shaky carts. If Eli has a mass of 70 kilograms, find:
  - a. Write the formula for momentum including units.
  - b. Write the formula for impulse including units.
  - c. Show how change in momentum equals impulse
  - d. If Eli covers 10 meters in 3.2 seconds, determine Eli's average velocity
  - e. Calculate Eli's momentum
  - f. Chelsea and Nathan attempt to stop Eli, they bring him to a rest in 0.75 seconds. Determine how much force was imparted on Eli to bring him to a rest.
  - g. What is the impulse imparted onto Eli?
  - h. What is Eli's change in momentum
  - i. How much momentum is left after Eli is brought to a stop?
  - j. If during the next trial Chelsea and Nathan stop Eli in 0.30 seconds, how much force did they impart onto Eli?
    - i. Does this change the impulse on Eli? State yes or no and explain your answer.