

Name: \_\_\_\_\_

Score:

## Worksheet – Impulse and Momentum

*Show all work!*

1. Determine the momentum of a 20 kilogram object that is moving at 4.0 meters per second.
  
  
  
  
  
  
  
  
  
  
2. Determine the speed of a 25 kilogram object that has a momentum of 100 kilogram·meters per second.
  
  
  
  
  
  
  
  
  
  
3. A 10 newton force acts on a 4.0 kilogram object that is initially at rest for 0.50 second.
  - a. Calculate the impulse imparted to the object by this force.
  
  
  
  
  
  
  
  
  
  
  - b. Determine the speed of the object at the end of 0.50 seconds.
  
  
  
  
  
  
  
  
  
  
4. A 5.0 kilogram object has a velocity of 10.0 meters per second due east. An unbalanced force acts on the object for 1.5 seconds, causing its velocity to decrease to 2.0 meters per second east.
  - a. Determine the initial momentum, final momentum and impulse of the object.

You must **show all work to receive credit** for the problems above.  
If you are using this as a replacement grade for a missing assignment, it will be graded on a basis of 80% of the credit. No credit will be given without appropriate work. Box your answers, with correct units and significant digits.