Worksheet: Momentum Word Problems
CHAPTER 8: Momentum

Directions: Answer the following questions concerning the conservation of momentum using the equations below. Show all of you work to receive credit.

\[ p = mv \quad Ft = \Delta (mv) \quad impulse = F\Delta t \]

1. A net force of 100 Newton's is applied to a wagon for 5 seconds. This causes the wagon to undergo a change in momentum of

2. A net force of 200 Newton's is applied to a wagon for 3 seconds. This causes the wagon to undergo a change in momentum of

3. A 2.0-kg ball has a momentum of 25 kg·m/s. What is the ball's speed?

4. A 1.0-kg ball has a momentum of 12 kg·m/s. What is the ball's speed?

5. A 1.5-kg ball is thrown at 10 m/s. What is the ball's momentum?

6. A ball is moving at 7.0 m/s and has a momentum of 100 kg·m/s. What is the ball's mass?
7. A ball is moving at 4.5 m/s and has a momentum of 75 kg·m/s. What is the ball's mass?

8. Your brother’s mass is 40.0 kg, and he as a 1.30 kg skateboard. What is the combined momentum of your brother and his skateboard if they are going 8.50 m/s?

9. Your brother’s mass is 55.0 kg, and he as a 2.0 kg skateboard. What is the combined momentum of your brother and his skateboard if they are going 8.50 m/s?

10. A hockey player makes a slap shot, exerting a constant force of 25.0 N on the puck for 0.16 seconds. What is the magnitude of the impulse given to the puck?

11. A hockey player makes a slap shot, exerting a constant force of 40.0 N on the puck for 0.20 seconds. What is the magnitude of the impulse given to the puck?

12. A constant force of 5.00 N acts on a 2.50 kg object for 10.0 s. What are the changes in the object’s momentum and velocity?

13. A constant force of 20 N acts on a 10.0 kg object for 5.0 s. What are the changes in the object’s momentum and velocity?