

**Mr. Bosworth**  
**General Physics**  
**Momentum Worksheet #1**

**Name** \_\_\_\_\_  
**Period** \_\_\_\_\_

1. A 2250 kg pickup truck has a velocity of 25.0 m/s to the east. What is the momentum of the truck? (Magnitude and direction).

Answer \_\_\_\_\_

2. What velocity must a 1210 kg car have in order to have the same momentum as the pickup in problem #1. Give the answer in mi/hr.

Answer \_\_\_\_\_

3. A .500 kg football is thrown with a velocity of 15.0 m/s to the right. A stationary receiver catches the ball and brings it to rest in .0200 s. What is the force exerted on the ball by the receiver? (Magnitude and direction)

Answer \_\_\_\_\_

4. An 82.0 kg man drops from rest on a diving board 3.00 m above the surface of the water and comes to rest .550 s after reaching the water. What is the net force acting on the diver as he is brought to rest? (Magnitude and direction)

Answer \_\_\_\_\_

5. A .400 kg soccer ball approaches a player horizontally with a velocity of 18.0 m/s to the north. The player strikes the ball and causes it to move in the opposite direction with a velocity of 22.0 m/s. What impulse was delivered to the ball by the player? (Magnitude and direction)

Answer\_\_\_\_\_

6. If the kick in #5 occurred for .0355 s, with what force did the player kick the ball? (Magnitude and direction)

Answer\_\_\_\_\_

7. A 2240 kg car traveling west slows down uniformly from 20.0 m/s to 5.00 m/s. If the force acting on the car was a constant 8410 N to the east, how far and in what direction does the car move during the deceleration?

Answer\_\_\_\_\_

8. A 2500 kg car is traveling north and is slowed from 20.0 m/s to a stop by a 6250 N braking force acting in the opposite direction. How long does it take to stop?

Answer\_\_\_\_\_

9. If everything from #8 were true except it was now a 12500 kg truck, how long would it take to stop the truck?

Answer\_\_\_\_\_