Name _____ Date _____ Period _____

Worksheet: Momentum Test Review

C H A P T E R   8 :   M o m e n t u m

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

$$p = mv \qquad\qquad Ft = \Delta(mv) \qquad\qquad impulse = F\Delta t$$

$$p_{before} = p_{after} \qquad\qquad \textbf{net momentum }_{\textbf{\textit{before}}} \textbf{= net momentum }_{\textbf{\textit{after}}}$$

$$(m_1 v_1 + m_2 v_2)_{before} = (m_1 v_1 + m_2 v_2)_{after}$$

1. A cannon recoils from launching a cannonball. The speed of the cannon's recoil is small because the

2. A 2-kg ball has a momentum of 100 kg·m/s. What is the ball's speed?

3. Another name for "change in momentum" is _____.

4. The momentum of an object is defined as the object's _____ x _____.

5. A collision is considered elastic if

6. Momentum of a system is conserved only when

7. A 3 ball is thrown at 25 m/s. What is the ball's momentum?

8. The reason padded dashboards are used in cars is that they

9. A cannonball shot from a long-barrel cannon travels faster than one shot from a short-barrel cannon because the cannonball receives a greater _____.

10. A ball is moving at 5 m/s and has a momentum of 30 kg·m/s. What is the ball's mass?

11. A cannon fires a cannonball. The speed of the cannonball will be the same as the speed of the recoiling cannon if?

12. A 2-kg ball is thrown at 5 m/s. What is the ball's momentum?

13. A ball is moving at 4 m/s and has a momentum of 24 kg·m/s. What is the ball's mass?

14. A 5-kg ball has a momentum of 50 kg·m/s. What is the ball's speed?

15. When these two freight cars of different mass collide and couple, what will be their resultant velocity?

5 Tons   10 Tons

2 m/s   0 m/s
Before

? m/s
After