Momentum conservation (worksheet 1)

Quiz: How does the airbag in the car save lives?

- It increases the force by increasing the time of collision.
- It decreases the force by increasing the time of collision.
- It increases the force by decreasing the time of collision.
- It decreases the force by decreasing the time of collision.

Which type of system (<u>does not gain or lose mass</u>)?

a. Closed system

b. Isolated system

c. Open system

d. Equilibrium system

What term describes a system with <u>(no balanced external forces</u>) acting from objects outside it?

a. Isolated system

b. Open system

c. Closed system

d. Equilibrium system

What does the <u>law of conservation of momentum</u> state?

a. The momentum of any closed, isolated system does not change

b. The momentum of any system increases over time

c. The momentum of any system decreases over time

d. The momentum of any system depends on its mass

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	A 1 kg object is moving with a velocity of 10 m/s to the right. It collides with a stationary 2 kg object. After the collision, the 1 kg object moves to the left with a velocity of 4 m/s. What is the velocity of the 2 kg object after the collision? a. 12 m/s to the left b. 8 m/s to the left c. 4 m/s to the right d. 2 m/s to the right
	Two carts with masses of 1 kg and 2 kg collide elastically. Before the collision, the 1 kg cart is moving with a velocity of 3 m/s to the right, and the 2 kg cart is stationary. After the collision, what is the velocity of the 1 kg cart? a. 0.5 m/s to the right b. 1.0 m/s to the right c. 1.5 m/s to the right d. 3.0 m/s to the right
	A ball with a mass of 0.5 kg and a velocity of 6 m/s collides with a stationary ball with a mass of 0.3 kg. If the collision is perfectly elastic, what is the velocity of the first ball after the collision? a. 14 m/s b. 8 m/s c. 7 m/s d. 4 m/s

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