

Momentum conservation (worksheet 1)
Quiz: How does the airbag in the car save lives? <ul style="list-style-type: none">- 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>)? <ul style="list-style-type: none">a. Closed systemb. Isolated systemc. Open systemd. Equilibrium system
What term describes a system with (<u>no balanced external forces</u>) acting from objects outside it? <ul style="list-style-type: none">a. Isolated systemb. Open systemc. Closed systemd. Equilibrium system
What does the <u>law of conservation of momentum</u> state? <ul style="list-style-type: none">a. The momentum of any closed, isolated system does not changeb. The momentum of any system increases over timec. The momentum of any system decreases over timed. The momentum of any system depends on its mass

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