

Chapter C3: Momentum Transfer, Impulse, Force Practice

Physics I

College of the Atlantic

1. A 3 kg cart moving at 4 m/s to the right hits a 10 kg cart that is at rest. After the collision, the 3 kg cart is moving to the left at 1 m/s.
 - (a) How much momentum does the left cart transfer to the right cart?
 - (b) What is the velocity of the right cart after the collision?
 - (c) Draw an arrow diagram similar to that on the upper right of page 49.

2. A 3 kg box of tofu sits on a table.
 - (a) What is the mass of the box?
 - (b) What is the magnitude of the weight of the box?
 - (c) Over a time interval of one second, what is the magnitude of the impulse the box receives as a result of the gravitational interaction?
 - (d) What is the magnitude of the force exerted on the box as a result of the gravitational interaction?
 - (e) What is the magnitude of the force that the table exerts on the box?
 - (f) Over a time interval of two seconds, what is the magnitude of the impulse the box receives from the table?
 - (g) Over a time interval of two seconds, what is the magnitude of the impulse the box receives from the gravitational interaction?