Chapter C3: Examples/Exercises

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 magnitude of the weight of the box?
   (b) Over a time interval of one second, what is the magnitude of the impulse the book receives as a result of the gravitational interaction?
   (c) What is the magnitude of the force exerted on the book as a result of the gravitational interaction?
   (d) What is the magnitude of the force that the table exerts on the book?
   (e) Over a time interval of two seconds, what is the magnitude of the impulse the book receives from the table?
   (f) Over a time interval of two seconds, what is the magnitude of the impulse the book receives from the gravitational interaction?