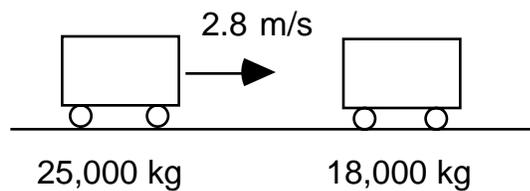
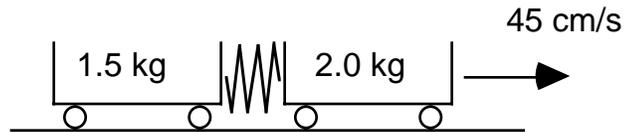


Momentum : Test-80

- 1) Find the momentum.
 - a) A 1500 kg truck travels with a velocity of + 4.0 m/s.
 - b) A 7.0 gram bullet travels with a velocity of - 240 m/s.
- 2) The speed of a 520 kg car increases from 2.5 m/s to 7.0 m/s.
 - a) The change in momentum is _____ .
 - b) The impulse is _____ .
- 3) Find the change in momentum of a golf ball that has a force of 650 N exerted on it for 0.0050 s.
- 4) Find the force necessary to stop a 750 kg car traveling at + 18 m/s in a time of 5.0 seconds.
- 5) A car slows from + 8.0 m/s to + 3.0 m/s in 4.0 s. The braking force is - 750 N.
 - a) The change in momentum is _____ .
 - b) The impulse is _____ .
 - c) The mass of the car is _____ .
- 6) A 7.0 kg shell is fired horizontally from a 1200 kg cannon with a velocity of 2.2×10^2 m/s. Find the recoil velocity of the cannon.
- 7) A 25,000 kg railway car collides and couples to a stationary 18,000 kg car. Find the final velocity of the pair.



8) Two carts move to the right with a compressed spring between them, as shown.



After the spring is decompressed, the front cart moves forward with a velocity of 60. cm/s.

- a) The total initial momentum is _____ .
- b) The total final momentum is _____ .
- c) Find the final velocity of the second cart. _____ .

Answers: 1)a) $+ 6.0 \times 10^3$ kg m/s, b) $- 1.7$ kg m/s, 2)a) 2300 kg m/s, b) 2300 N-s, 3) $+ 3.3$ N-s, 4) -2700 N, 5)a) $- 3.0 \times 10^3$ kg m/s, b) $- 3.0 \times 10^3$ N-s, c) 6.0×10^2 kg, 6) $- 1.3$ m/s, 7) $+ 1.6$ m/s, 8)a) $+ 1.6$ kg m/s, b) $+ 1.6$ kg m/s, c) $+ 25$ cm/s.