Impulse

$$\Delta p = Ft$$
OR
$$Ft = mv_f - mv_i$$

A 0.5 kg ball is thrown with a velocity of 15 m/s to the right. A stationary receiver catches the ball and brings it to rest in 0.02 s. What is the force exerted on the ball?

An 82 kg box hangs from a 3 meter high ledge above a lake. The box drops and comes to rest 0.55 seconds after striking the water. What is the net force as the box is brought to rest?

A 0.4 ball is moving with a velocity of 18 m/s North. The ball is hit and moves in the opposite direction with a velocity of 22 m/s. What impulse was delivered to the ball?

A 0.5 kg object is at rest. A 3 N force to the right acts on the object over 1.5 seconds.

a.   What is the velocity after the 1.5 seconds?

b.   A 4 N force is applied (to the left) to the object for 3 seconds. What is the velocity after this force is applied?