3. From a rifle of mass 4 kg, a bullet of mass 50 g is fired with an initial velocity of 35 m s–1 . Calculate the initial recoil velocity of the rifle

Ans) Mass of the rifle (m1) = 4 kg

Mass of the bullet (m2) = 50 g =  0.05 kg

Recoil velocity of the rifle = v1

A bullet is fired with an initial velocity (v2) = 35 m/s

4.Two objects of masses 100 g and 200 g are moving along the same line and direction with velocities of 2 m s–1 and 1 m s–1, respectively. They collide and after the collision, the first object moves at a velocity of 1.67 m s–1 . Determine the velocity of the second object.

Ans) Mass of one of the objects (m1) = 100 g = 0.1 kg  
Mass of the other object (m2) = 200 g = 0.2 kg  
Velocity of m1 before collision (v1) = 2 m/s  
Velocity of m2 before collision (v2) = 1 m/s  
Velocity of m1 after collision (v3) = 1.67 m/s