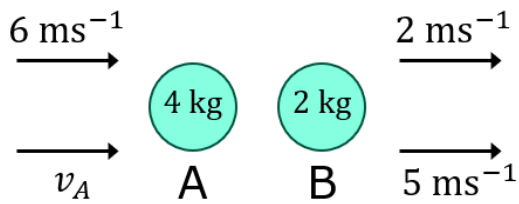


Momentum and Collisions

Given each of the isolated systems where particles A and B collide, find any missing velocities and calculate the magnitude of the impulse exerted on particle B by particle A.

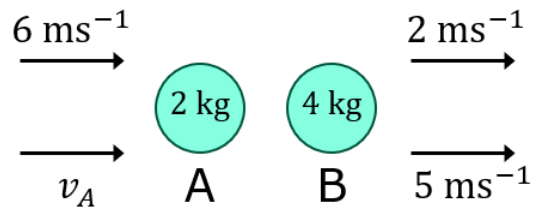
(a)



$$v_A = 4.5 \text{ ms}^{-1}$$

$$I = 6 \text{ Ns}$$

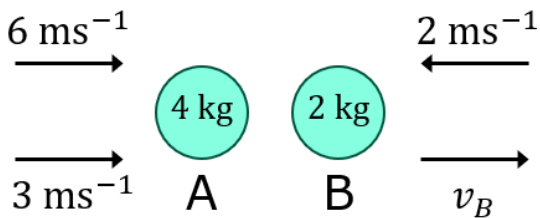
(b)



$$v_A = 0 \text{ ms}^{-1}$$

$$I = 12 \text{ Ns}$$

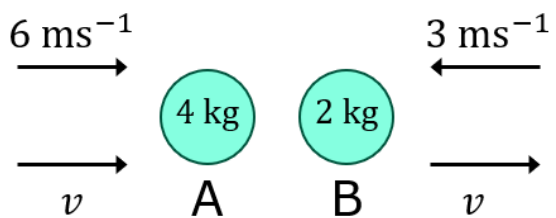
(c)



$$v_B = 4 \text{ ms}^{-1}$$

$$I = 12 \text{ Ns}$$

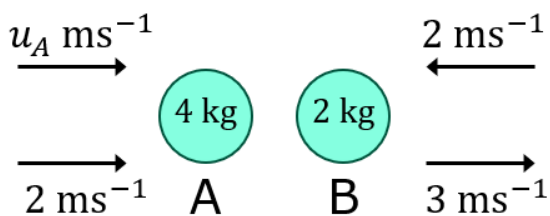
(d)



$$v = 3 \text{ ms}^{-1}$$

$$I = 12 \text{ Ns}$$

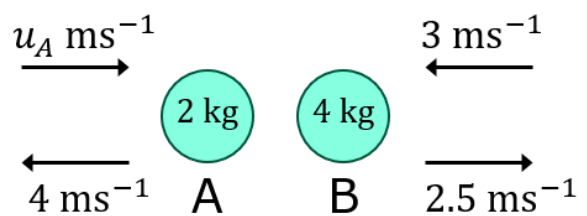
(e)



$$u_A = 4.5 \text{ ms}^{-1}$$

$$I = 10 \text{ Ns}$$

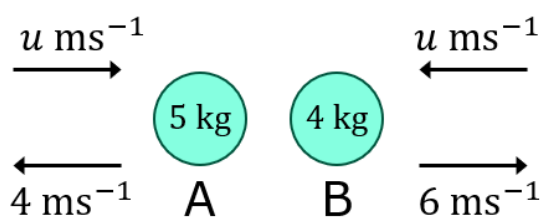
(f)



$$v_A = 7 \text{ ms}^{-1}$$

$$I = 22 \text{ Ns}$$

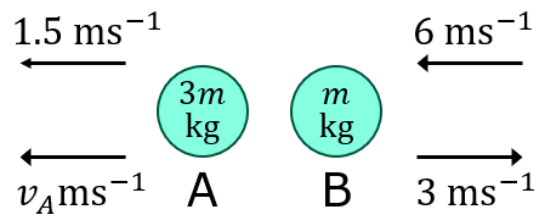
(g)



$$u = 4 \text{ ms}^{-1}$$

$$I = 40 \text{ Ns}$$

(h)



$$v_A = 4.5 \text{ ms}^{-1}$$

$$I = 9m \text{ Ns}$$