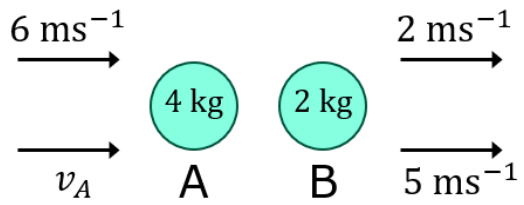
Momentum and Collisions

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.

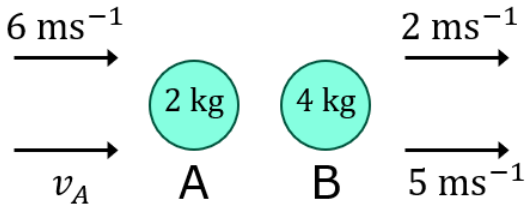
(a)



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

$I = 10 \text{ Ns}$

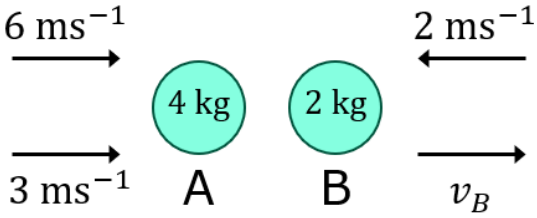
(b)



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

$I = 12 \text{ Ns}$

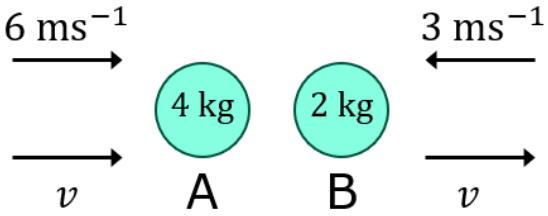
(c)



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

$I = 12 \text{ Ns}$

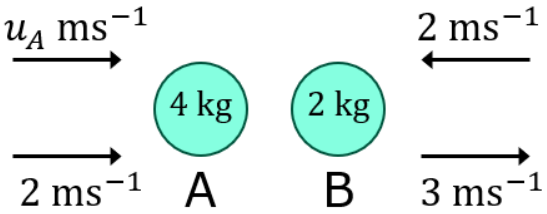
(d)



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

$I = 12 \text{ Ns}$

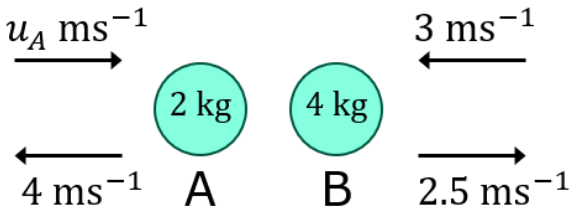
(e)



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

$I = 10 \text{ Ns}$

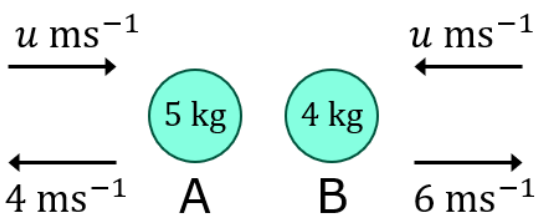
(f)



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

$I = 22 \text{ Ns}$

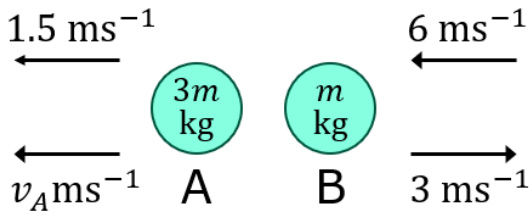
(g)



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

$I = 40 \text{ Ns}$

(h)



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

$I = 9m \text{ Ns}$