

$$73 \quad m = 0.150 \text{ kg}$$

$$u = 3 \text{ m s}^{-1}$$

$$v = -3 \text{ m s}^{-1}$$

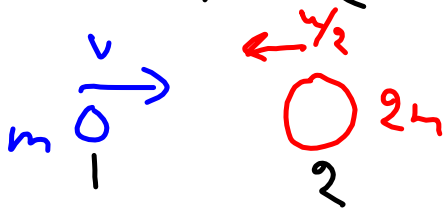
$$\begin{aligned} \text{a) Impulse} &= \Delta p = mu - mv = m(u - v) \\ &= 0.15 \text{ kg} (3 \text{ m s}^{-1} - (-3 \text{ m s}^{-1})) \\ &= 0.15 \text{ kg} \cdot 6 \text{ m s}^{-1} = \underline{\underline{0.9 \text{ kg m s}^{-1}}} \end{aligned}$$

$$\text{b) } F = \frac{\Delta p}{t} = \frac{0.9 \text{ kg m s}^{-1}}{0.125 \text{ s}} = \underline{\underline{7.2 \text{ N}}}$$

74 totally inelastic:

$$m_1 u_1 + m_2 u_2 = (m_1 + m_2) v \quad | \quad \cancel{(m_1 + m_2)}$$

$$v = \frac{m_1 u_1 + m_2 u_2}{m_1 + m_2}$$



$$m_2 = 2 \cdot m_1$$

$$u_2 = -\frac{1}{2} \cdot u_1$$

$$v = \frac{m_1 u_1 - 2m_1 \frac{1}{2} u_1}{m_1 + m_2} = \frac{\overbrace{m_1 u_1 - m_1 u_1}^{=0}}{m_1 + m_1} = 0$$