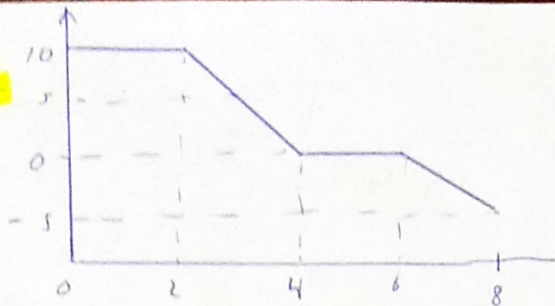


4



DATOS

H 4

$$M = 5 \text{ kg}$$

$$P = 20 \text{ N}$$

$$W_{0-4} = \int F \cdot dx = \Delta K$$

$$W_{0-4} = 10 \text{ N} \cdot 2 + 5 \text{ N} \cdot 2 = 30 \text{ N}$$

$$V(x=4 \text{ m}) = \cancel{20} \cdot W_{0-4} = \frac{1}{2} m V^2 \Rightarrow V = \sqrt{\frac{2 \cdot 30 \text{ N}}{m}} = 3.4641 \text{ m/s}$$

Luego de caer la bolsa

$$m_c V_c = (m_c + m_b) V_{c-b}$$

$$V_{c-b} = \frac{m_c V_c}{m_c + m_b} = 2.46 \text{ m/s}$$

al final recorrido

$$W_{6-8} = \frac{-5 \text{ N}}{2} \cdot 2 \text{ m} = -5 \text{ J}$$

$$W = \Delta K = -5 \text{ J} = \frac{1}{2} (m_c + m_b) V_f^2 - \frac{1}{2} (m_c + m_b) V_{c-b}^2$$

$$\boxed{V_f = \sqrt{\frac{2(-5 \text{ J})}{(m_c + m_b)}} + V_{c-b}^2} = \boxed{2.15 \text{ m/s}}$$