$E_c = \frac{1}{2} m \cdot v^2$

1) Voy a usar el Teorema de la E_c y el Trabajo.

$$W_{\vec{F}_{neta}} = W_{\vec{F}_{ext}} = \Delta E_c = E_{c_f} - E_{c_0}$$

Cuerpo 1: $\rightarrow m_1 = 3\,Kg$

$$W_{F_{neta}} = \sum F_{ext} = \Delta E_c \Rightarrow W_p + W_N + W_{fr} = E_{c_f} - E_{c_0}$$

$$-\Delta E_{pg} + 0 + (-F_r \cdot \Delta l) = \frac{1}{2} m v_f^2 + \frac{1}{2} m v_0^2$$

$$-(m g h_f - m g h_0) + [-F_r (l_0 - l_f)] = \frac{1}{2} m v_f^2$$

$$-m\, g\, h_f = \frac{1}{2}\, m\, v_f^2 \quad (1)$$

Cuerpo 2:

$$W_{F_{neta}} = \sum F_{ext} = \Delta E_c \Rightarrow W_p = E_{c_f} - E_{c_0}$$

$$-\Delta E_{pg} = E_{c_f} - E_{c_0} \Rightarrow -(m_2 g h_f - m_2 g h_0) = \frac{1}{2} m v_f^2 - \frac{1}{2} m v_0^2$$

$$-(-m_2 g h_0) = \frac{1}{2} m\, v_f^2 \Rightarrow m_2 g \cdot h_0 = \frac{1}{2}\, m \cdot v_f^2 \quad (2)$$

$$5\,Kg \cdot 9{,}8\, m/s^2 \cdot 0{,}3\, m = \frac{1}{2} \cdot 5\,Kg\; v_f^2$$

$$\sqrt{\frac{14{,}7\,N}{2{,}5\,Kg}} = v_f \Rightarrow v_f \approx 2{,}42$$