

# Problema Física

## Pregunta 1

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

$$v_i = 8 \text{ m/s}$$

$$d = 3 \text{ m}$$

$$\mu = ?$$

$$N = 43,3$$

$$W F N_0 = 45$$

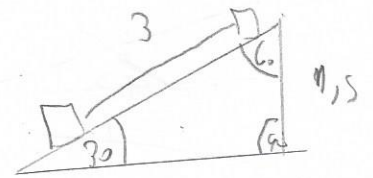
$$N \cdot M \cdot d \cdot \cos 110 = EF - t_i$$

$$mg \cos 30 \cdot M \cdot 3 - 1 = mgh - \frac{1}{2} m \cdot v^2$$

$$-43,3 \cdot 3 \cdot M = 50 \cdot 1,5 - 160$$

$$-130 M = -85$$

$$\mu = 0,65 (N)$$

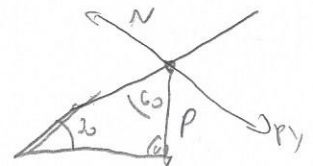


$$\text{Sen } 30 = \frac{CO}{HIP}$$

$$\text{Sen } 30 = \frac{CO}{3}$$

$$3 \text{ Sen } 30 = CO$$

$$1,5 = CO$$



$$N = Py$$

$$N = mg \cdot \cos 30$$

## Pregunta 2

$$P_i = P_f$$

$$P_{ix} = P_{fx}$$

$$8m = m_i \cos 37 \cdot v_{ix} + v_{2x}$$

$$8m = m (\cos 37 \cdot 20 + v_{2x})$$

$$8 = 16 + v_{2x}$$

$$-8 = v_{2x}$$

$$P_{iy} = P_{fy}$$

$$0 = m \cdot \sin 37 \cdot 20 + m v_{y2}$$

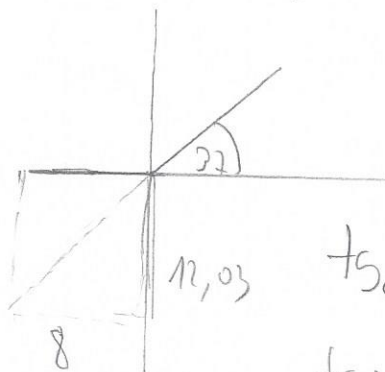
$$0 = 12,03 \text{ m} + m v_{y2}$$

$$-12,03 \text{ m} = m v_{y2}$$

$$v_{y2} = -12,03 \text{ m/s}$$

$$V_2 = \sqrt{(-8)^2 + (-12,03)^2}$$

$$V_2 = 14,4 \text{ m/s}$$



$$t_{s2} = \frac{OP}{AV}$$

$$t_{s2} =$$

$$\alpha = 35^\circ + 90^\circ$$

$$125^\circ, 4^\circ \text{ sobre la horizontal}$$

## Pregunta 3

$$V = \frac{d}{t}$$

$$d = 314 \text{ m}$$

$$t = 30 \text{ s}$$

$$V = \frac{314}{30}$$

$$R_1 = 10 = 0,1$$

$$R_2 = 4 = 0,04$$

$$R_3 = 40 = 0,4$$

$$V = 10,5 \text{ m/s}$$

a) 1 vuelta = 1 perímetro  $R_3$

$$P = 2\pi \cdot r = 2\pi \cdot 0,4 = 2,512 \text{ m}$$

$$\text{Vueltas} = \frac{314}{2,512} = 125 \text{ Vueltas}$$

b)  $\omega = \frac{2\pi}{t} \cdot \frac{125}{30}$

$$\omega = 26,2 \text{ rad/s}$$

c)  $V_1 = V_2$

$$\omega_1 = \omega_2$$

$$\omega_1 = \frac{0,04 \cdot 26,18}{0,1}$$

$$\omega = 10,47 \text{ rad/s}$$