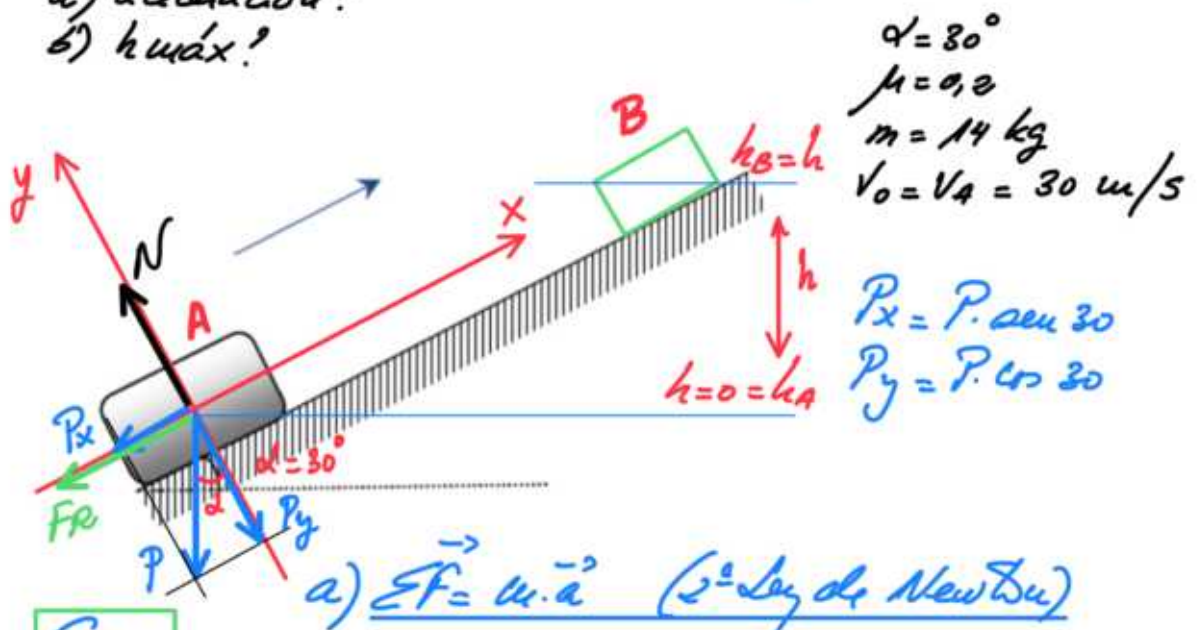


EJERCICIO FQ1BE3468!

"actiimages.com"

- a) aceleración?
b) h máx?



$$\alpha = 30^\circ$$

$$\mu = 0,2$$

$$m = 14 \text{ kg}$$

$$v_0 = v_A = 30 \text{ m/s}$$

$$P_x = P \cdot \sin 30$$

$$P_y = P \cdot \cos 30$$

Eje x:

$$a) \sum \vec{F} = m \cdot \vec{a} \quad (\text{2}^\circ \text{ Ley de Newton})$$

$$\sum F_x = m \cdot a_x \Rightarrow -P_x - F_r = m \cdot a$$

$$-m \cdot g \sin 30 - \mu \cdot N = m \cdot a$$

Eje y:

$$\Rightarrow \sum F_y = 0 \Rightarrow N - P_y = 0 \Rightarrow N = P_y$$

$$N = m \cdot g \cos 30$$

$$-m \cdot g \sin 30 - \mu \cdot m \cdot g \cos 30 = m \cdot a$$

$$-9,8 \cdot \sin 30 - 0,2 \cdot 9,8 \cos 30 = a$$

$$-4,9 - 1,7 = a \Rightarrow a = -6,6 \text{ m/s}^2$$

b) Altura máxima:

El peso es conservativo

$$W_{nc} = \Delta E \Rightarrow W_{Fr} + W_N = E_B - E_A$$

$$F_r \cdot d \cdot \cos 180 + N \cdot d \cdot \cos 90 = (E_c + E_p)_B - (E_c + E_p)_A$$

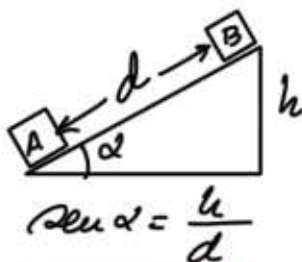
(No realiza W) $v_B = 0$ $h_A = 0$

$$\mu \cdot N \cdot d \cdot (-1) = m \cdot g \cdot h_B - \frac{1}{2} m v_A^2$$

$$-\mu \cdot m \cdot g \cos 30 \cdot \frac{h_B}{\sin 30} = m \cdot g \cdot h_B - \frac{1}{2} m \cdot 30^2$$

$$-3,39 h_B = 9,8 h_B - 450$$

$$-13,19 h_B = -450 \Rightarrow h_B = 34,12 \text{ m}$$



$$\sin \alpha = \frac{h}{d}$$

$$d = \frac{h}{\sin \alpha}$$