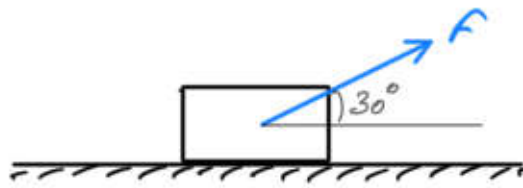
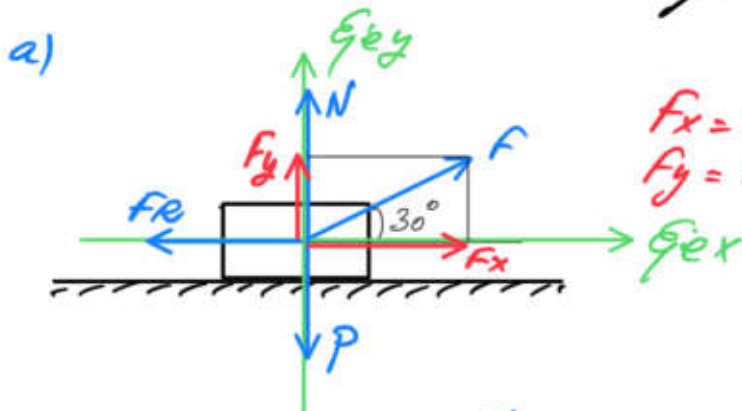


EJERCICIO FQ1BE2686:



$$\begin{aligned} m &= 15 \text{ kg} \\ F &= 45 \text{ N} \\ a &= 0,5 \text{ m/s}^2 \\ g &= 9,8 \text{ m/s}^2 \\ \mu &=? \end{aligned}$$



$$\begin{aligned} F_x &= F \cos 30 \\ F_y &= F \sin 30 \end{aligned}$$

b) 2^a Ley de Newton a c/eje: ($\sum \vec{F} = m \cdot \vec{a}$)

Eje x:

$$\sum F_x = m \cdot a$$

$$F_x - F_R = m \cdot a$$

$$F \cos 30 - \mu \cdot N = m \cdot a$$

Eje y: $\sum F_y = 0$

$$N + F_y - P = 0$$

$$N = P - F_y$$

$$N = m \cdot g - F \sin 30$$

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

$$45 \cdot \cos 30 - \mu \cdot (15 \cdot 9,8 - 45 \cdot \sin 30) = 15 \cdot 0,5$$

$$38,97 - \mu \cdot (147 - 22,5) = 7,5$$

$$38,97 - \mu \cdot 124,5 = 7,5$$

$$38,97 - 7,5 = \mu \cdot 124,5$$

$$31,47 = \mu \cdot 124,5$$

$$\mu = \frac{31,47}{124,5} \Rightarrow \boxed{\mu = 0,253}$$

c) ¿Velocidad al cabo de 4 metros?

M.R.U.A.; $v_0 = 0 \text{ m/s}$; $a = 0,5 \text{ m/s}^2$; $s = 4 \text{ m}$

$$v = v_0 + at \Rightarrow v = 0 + 0,5 \cdot t$$

$$s = s_0 + v_0 t + \frac{1}{2} at^2$$

$$4 = \frac{1}{2} 0,5 t^2 \Rightarrow t^2 = \frac{4 \cdot 2}{0,5} = 16$$

$$t = \sqrt{16} = 4 \text{ s}$$

$$v = v_0 + at$$

$$v = 0 + 0,5 \cdot 4 \Rightarrow \boxed{v = 2 \text{ m/s}}$$