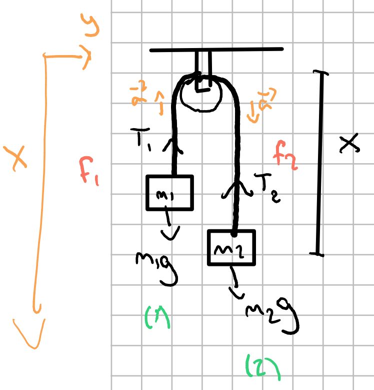
Ej. Máq. Atwood

(S. REF)



(2)

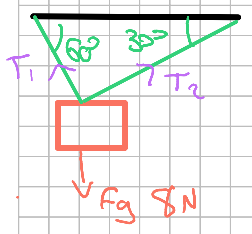
peso 2 tensión peso 1

Como está en equilibrio, $F_1 = F_2$: $[\, m_2 g - T_2 = m_2 a \,]$

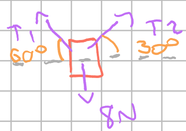
(1)

$[\, m_1 g - T_1 = m_1 a \,]$

Cuadro



El ΣT debe resultar en un vector con mismo módulo y dirección que Fg.



→ despejar con cos, sen

$$\begin{cases} x: & 0 = T_1 \cos 60^\circ + T_2 \cos 30^\circ \longrightarrow T_1 = \dfrac{-T_2\sqrt{3}}{2 \cdot 1/2} = -T_2\sqrt{3} \\ y: & -8 = T_1 \operatorname{sen} 60^\circ + T_2 \operatorname{sen} 30^\circ \end{cases}$$

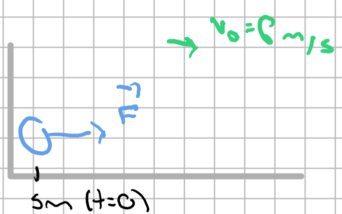
$$\Rightarrow -T_2\sqrt{3} \operatorname{sen} 60^\circ + T_2 \operatorname{sen} 30^\circ + 8 = 0$$

$$-T_2\sqrt{3} \cdot \frac{\sqrt{3}}{2} + T_2 \frac{1}{2} + 8 = 0 \Rightarrow \frac{T_2 - 2T_2\sqrt{3} + 16}{2} = 0$$

$$\Rightarrow T_2 - 2T_2\sqrt{3} + 16 = 0 \Rightarrow \boxed{T_2 = \frac{16}{\sqrt{3}}\ N}$$ 4

$$T_1 = \frac{-16}{\sqrt{3}} \sqrt{3} \Rightarrow \boxed{T_2 = -16\ N}$$ 6'9

Partícula



$m = 10g$

$F_x = (120t + 40) = ma$

$x_0 = 5m$

$v_0 = 6$ m/s

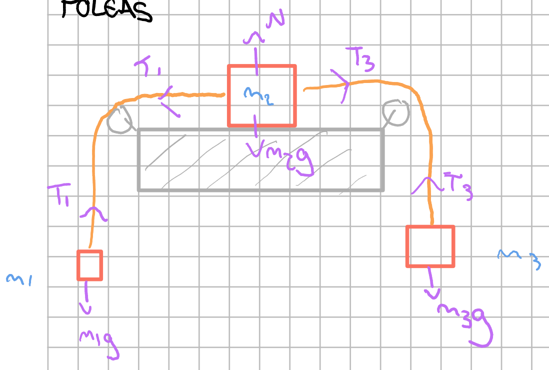
$F_y = 0$

$F_x = m a_x$

$$a_x = \frac{dv_x}{dt} \Rightarrow \int_0^t a_x\,dt = \int_{0\ m/s}^{v_x} dv_x$$

$$v_x = \frac{dx}{dt} \Rightarrow \int_0^t v_x\,dt = \int_{x_0=5}^{x} dx$$

Poleas



$F=ma$

$-m_1g+T=m_1a$

$F=ma$

$\boxed{m_1}$

$-m_1g+T=m_1a$

$\boxed{m_2}$

$y: -m_2g+N=0$

$x: T_3-T_1=m_2a$

$\boxed{m_3}$

$-T_3+m_3g=m_3a$