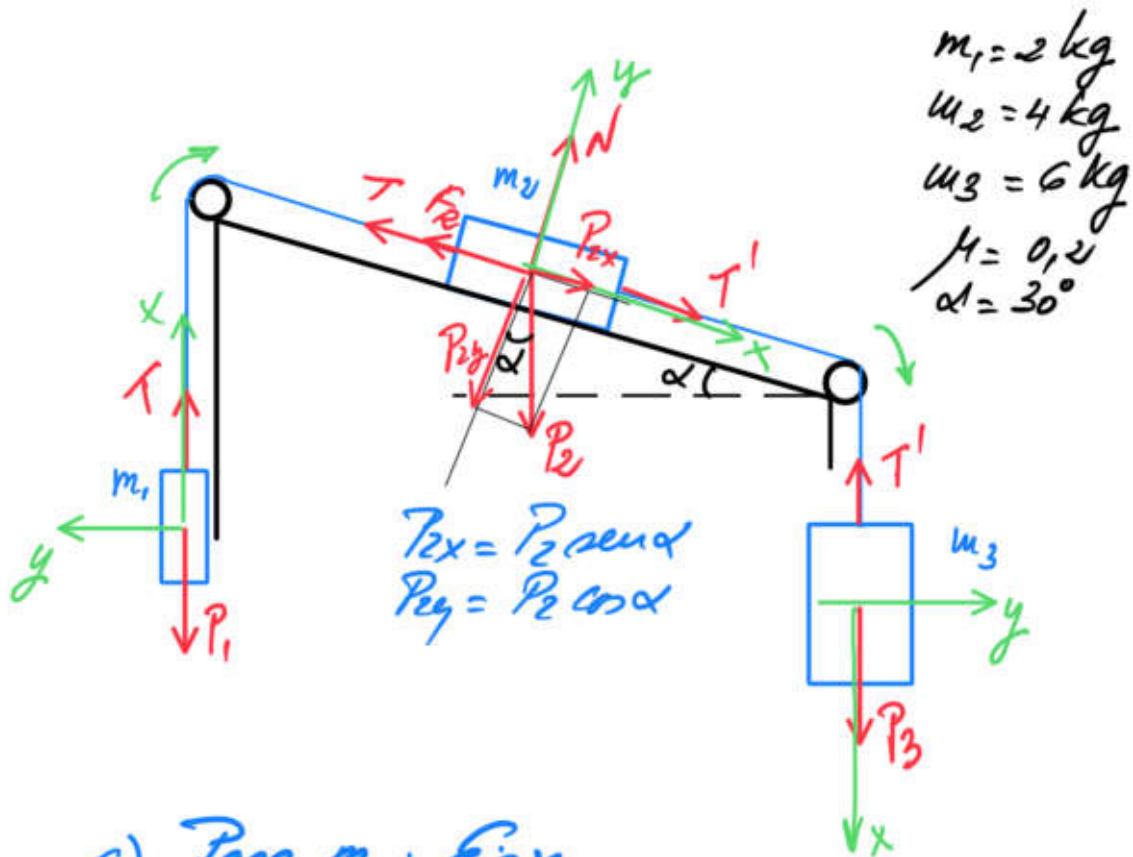


EJERCICIO FQ1BE2689:



a) Para  $m_1$ :  $E_{ex}$

$$\sum F_x = m_1 \cdot a$$

$$T - P_1 = m_1 \cdot a$$

$$T - m_1 \cdot g = m_1 \cdot a \Rightarrow T - 2 \cdot 9,8 = 2 \cdot a$$

$$\boxed{T - 19,6 = 2a} \quad (1)$$

b) Para  $m_2$ :  $E_{ex}$ :

$$\sum F_x = m_2 \cdot a$$

$$T' + P_{2x} - f_R - T = m_2 \cdot a$$

$$T' + m_2 g \cdot \text{sen } 30 - \mu \cdot N - T = m_2 \cdot a$$

$E_{ey}$ :  $\sum F_y = 0$

$$N - P_{2y} = 0$$

$$N = P_{2y}$$

$$N = m_2 \cdot g \cdot \text{cos } 30$$

$$T' + \overbrace{4,98 \cdot 0,230}^{P_{2x}} - \overbrace{0,2 \cdot 4,98 \cdot 0,230}^{\mu} - \overbrace{T}^{N=P_{2y}} = 4a$$

$$T' + 19,6 - 6,79 - T = 4a$$

$$\boxed{T' + 12,81 - T = 4a} \quad (2)$$

c) Para  $m_3$ :  $E_{2x}$ :

$$\Sigma F_x = m_3 \cdot a$$

$$P_3 - T' = m_3 \cdot a$$

$$m_3 g - T' = m_3 \cdot a$$

$$6,98 - T' = 6a$$

$$\boxed{58,8 - T' = 6a} \quad (3)$$

d) ¿Aceleración?

$$\left. \begin{aligned} T - 19,6 &= 2a \\ T' + 12,81 - T &= 4a \\ 58,8 - T' &= 6a \end{aligned} \right\}$$

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$$58,8 + 12,81 - 19,6 = 12a$$

$$52,01 = 12a$$

$$a = \frac{52,01}{12} \Rightarrow \boxed{a = 4,33 \text{ m/s}^2}$$

e) ¿Tensiones?

$$T - 19,6 = 2a$$

$$T = 2a + 19,6$$

$$T = 2 \cdot 4,33 + 19,6$$

$$T = 8,66 + 19,6$$

$$T = 28,26 \text{ N}$$

$$58,8 - T' = 6a$$

$$58,8 - T' = 6 \cdot 4,33$$

$$58,8 - 25,98 = T' \Rightarrow T' = 32,82 \text{ N}$$