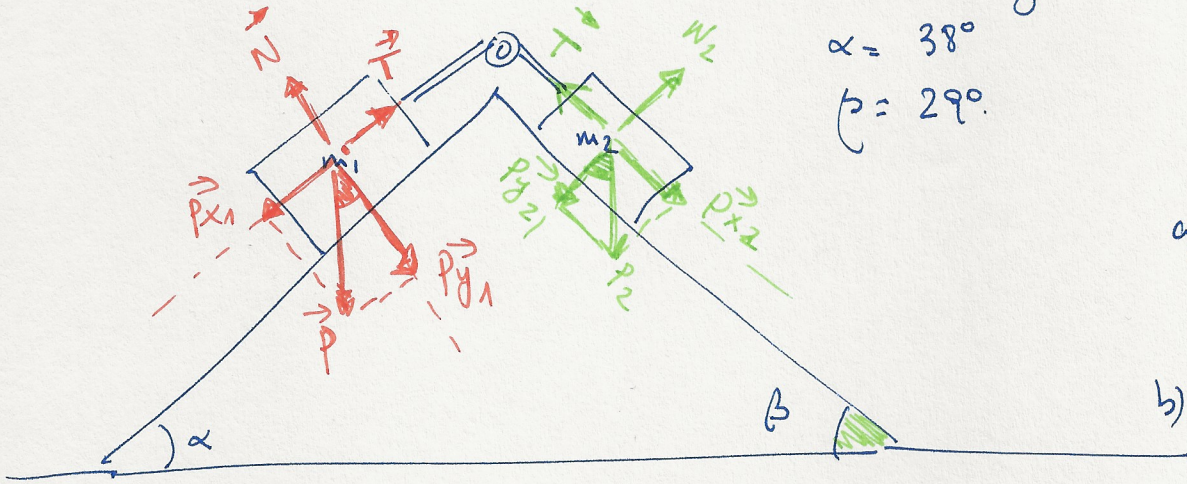


$m_1 = 450 \text{ g}$

$m_2 = 790 \text{ g}$

$\alpha = 38^\circ$

$\beta = 29^\circ$



a) a ? T ?
sense frenament

b) a ? T ?
amb frenament.
 $\mu = 0.08$.

Calcular el sentit del moviment comparant els valors de p_{x1} i p_{x2}

$p_{x1} = m \cdot g \cdot \sin \alpha = 0.45 \text{ kg} \cdot 9.8 \text{ m/s}^2 \cdot \sin 38^\circ = 2.72 \text{ N}$

$p_{x2} = m \cdot g \cdot \sin \beta = 0.79 \text{ kg} \cdot 9.8 \text{ m/s}^2 \cdot \sin 29^\circ = 3.75 \text{ N}$

Com que $p_{x2} > p_{x1}$ el sentit de moviment és cap a la dreta. \rightarrow

Aplicarem 2n llei Newton.

eix x $m_1 \Rightarrow T - p_{x1} - F_{f1} = m_1 \cdot a$

eix x $m_2 \Rightarrow p_{x2} - T - F_{f2} = m_2 \cdot a$

Sumem les dues equacions: $p_{x2} - p_{x1} - F_{f1} - F_{f2} = (m_1 + m_2) \cdot a$

a) Si no hi ha frenament: $F_{f1} = F_{f2} = 0$ (si no hi ha frenament)

$a = \frac{p_{x2} - p_{x1} - F_{f1} - F_{f2}}{m_1 + m_2} = \frac{m_2 \cdot g \cdot \sin \beta - m_1 \cdot g \cdot \sin \alpha}{m_1 + m_2} = 0.84 \text{ m/s}^2$

$T = 3.09 \text{ N}$

b)

Si $\mu = 0.08$

$a = \frac{p_{x2} - p_{x1} - F_{f1} - F_{f2}}{m_1 + m_2} = \frac{m_2 \cdot g \cdot \sin \beta - m_1 \cdot g \cdot \sin \alpha - \mu (m_1 \cdot g \cdot \cos \alpha + m_2 \cdot g \cdot \cos \beta)}{m_1 + m_2}$

$a = 0.18 \text{ m/s}^2$

$T = 3.07 \text{ N}$