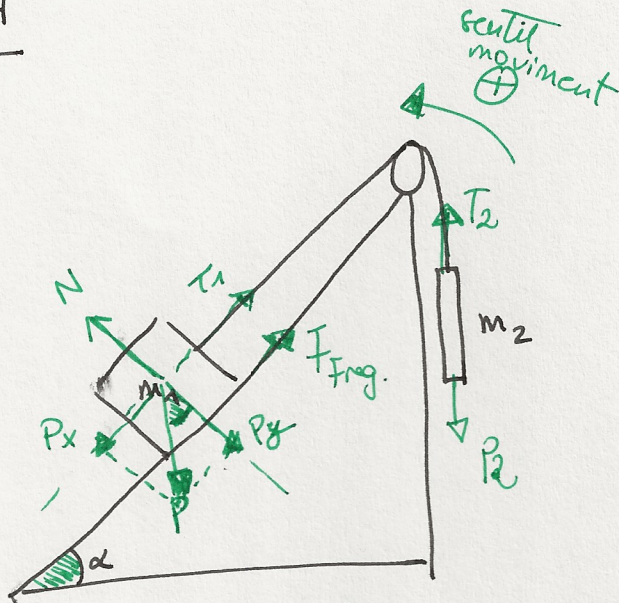


$\alpha = 54^\circ$
 $m_1 = 9.3 \text{ kg}$
 $m_2 = 2.4 \text{ kg}$



Sabem que :
 $T_2 = T_1$

a) a? T? si no hi ha fregament

Plantejament:

Determinem el sentit moviment :

$P_{x1} = m_1 \cdot g \cdot \sin \alpha = 9.3 \cdot 9.8 \cdot \sin 54 = 73.73 \text{ N}$

$P_2 = m_2 \cdot g = 2.4 \cdot 9.8 = 23.52 \text{ N}$

Calculem
 P_{x1} i P_2

Resolució: Com que $P_{x1} > P_2$ el sistema es mou cap a l'esquerra

Apliquem 2n llei de Newton $\sum \vec{F}_i = m \cdot \vec{a}$ a tots dos cossos:

eix x m_1 $P_{x1} - T - F_{freg1} = m_1 \cdot a$
 eix x m_2 $T - P_2 = m_2 \cdot a$

$P_{x1} - P_2 - F_{freg1} = (m_1 + m_2) \cdot a$

$a = \frac{P_{x1} - P_2 - F_{freg.1}}{m_1 + m_2} = \frac{m_1 \cdot g \cdot \sin \alpha - m_2 \cdot g - \mu \cdot \frac{m_1 \cdot g \cdot \cos \alpha}{N}}{m_1 + m_2} \rightarrow = 0$

eix y m_1 : $N = P_y$

$a = 4.3 \text{ m/s}^2$

Per calcular la tensió agafo qualsevol de les 2 equacions anteriors

$T - P_2 = m_2 \cdot a \Rightarrow T = P_2 + m_2 \cdot a = \boxed{33.8 \text{ N}}$

b) Si $\mu = 0.37$.

$a = \frac{P_{x1} - P_2 - F_{fregament 1}}{m_1 + m_2} = \frac{m_1 \cdot g \cdot \sin \alpha - m_2 \cdot g - \mu \cdot m_1 \cdot g \cdot \cos \alpha}{m_1 + m_2}$

$a = 2.6 \text{ m/s}^2$

$T = P_2 + m_2 \cdot a = \boxed{29.8 \text{ N}}$