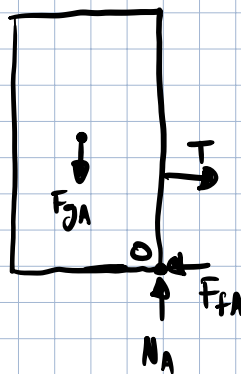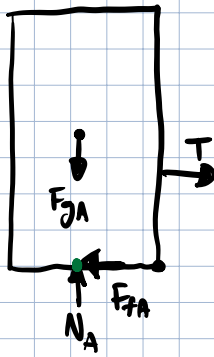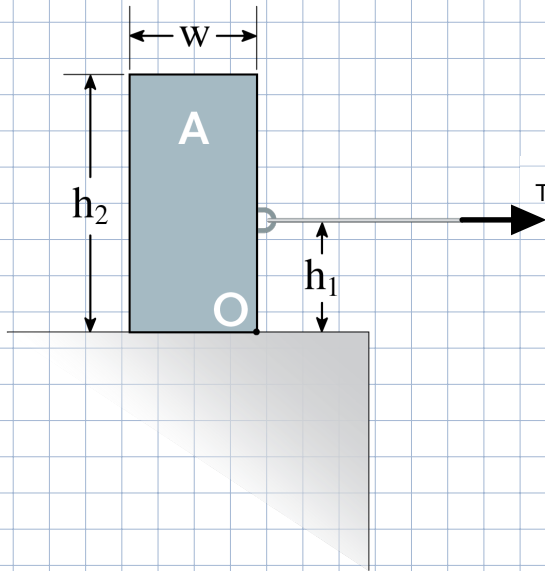You have set up the following block such that A is connected to a rope with tension T. Block A has a mass of 12kg and height $h_2 = 0.8$m, width $w = 0.4$m. The rope connects at a height $h_1 = 0.4$ m and the coefficients of static and kinetic friction are given as $\mu_s = 0.35$ and $\mu_k = 0.3$. Determine if Block A tips or slips first and the force T required for this to occur.

slip: $\sum F_x = m_A \cancel{a_x} = T - F_{fA} = 0$

$\sum F_y = m_A \cancel{a_y} = F_{gA} - N_A \implies m_A g = N_A = 117.7N$

$F_{fA} = \mu_s N_A = (0.35)(117.7 \text{ N}) \to T = 41.2N = T_{slip}$

tip: $\sum N_O = I_O \cancel{\lambda}^{=0} = T(h_1) - \frac{F}{2}A\left(\frac{w}{2}\right) = 0$

$\mathrel{\rightarrow}_D$ $T = \dfrac{(117.7N)(0.2m)}{(0.4m)} = 58.9\ N = T_{tip}$

since $T_{tip} > T_{slip} \Rightarrow$ slipping before tipping

$T = 41.2\ N$