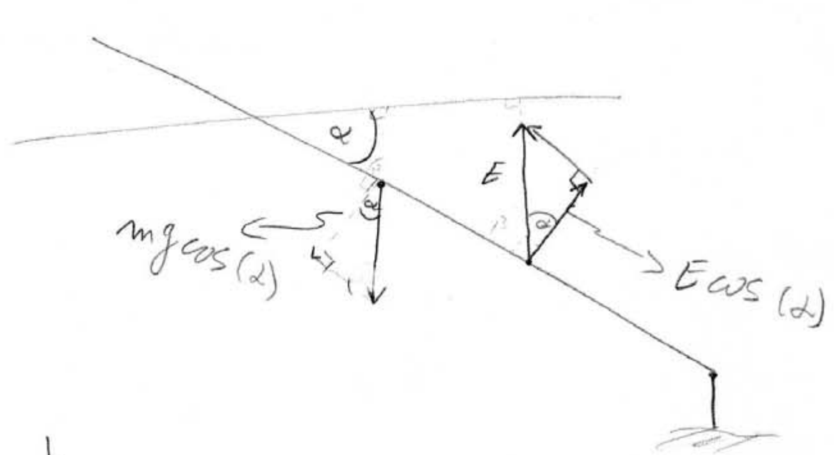
Ejercicio 0.7B

$\curvearrowleft_T$ PAUTA



$L_s = \frac{h}{\text{sen}(\alpha)}$; $E = \frac{h}{\text{sen}(\alpha)} \cdot A \cdot \rho_0 \cdot g$ 0,5 (Empuje)

$T_E = E\cos(\alpha) \cdot \frac{L_s}{2} = \frac{hA\rho_0 g}{\text{sen}(\alpha)} \cos(\alpha) \cdot \frac{h}{2\,\text{sen}(\alpha)}$ 1 (Torque Empuje)

$T_{mg} = (L \cdot A \cdot \rho_1 \cdot g) \cdot \cos(\alpha) \cdot \frac{L}{2}$ 0,5 (Torque peso)

$T_{mg} - T_E = 0$ 0,3 (Ecuacion estatica)

$\Rightarrow$

$$\frac{hA\rho_0 g}{\text{sen}(\alpha)} \cos(\alpha) \cdot \frac{h}{2\,\text{sen}(\alpha)} = L A \cdot \rho_1 \cdot g \cos(\alpha) \cdot \frac{L}{2}$$

$$\frac{h^2 \rho_0}{2\,\text{sen}^2(\alpha)} = \frac{L^2 \rho_1}{2} \Rightarrow \text{sen}^2\alpha = \frac{h^2 \rho_0}{L^2 \rho_1} \Rightarrow \text{sen}\,\alpha = \sqrt{\frac{\rho_0}{\rho_1}}$$

0,7 (Despejar)

$$\text{sen}\,\alpha = 1 \Rightarrow 1 = \sqrt{\frac{\rho_0}{\rho_1}} \cdot \frac{h}{L} \Rightarrow h = L \cdot \sqrt{\frac{\rho_1}{\rho_0}}$$

)

$$T = E - mg = \frac{hA\rho_0 g}{\operatorname{sen}\alpha} - LA\rho_1 g$$

1 (PRAMTEAM CSTA

$$= \frac{L\sqrt{\rho_1}}{k\sqrt{\rho_0}} \cdot k \cdot A\rho_0 \cdot g_0 - LA\rho_1 g = LAg\left(\frac{\sqrt{\rho_1}}{\sqrt{\rho_0}} \cdot \rho_0 - \rho_1\right)$$

0,5 (Desperam)