

En A:

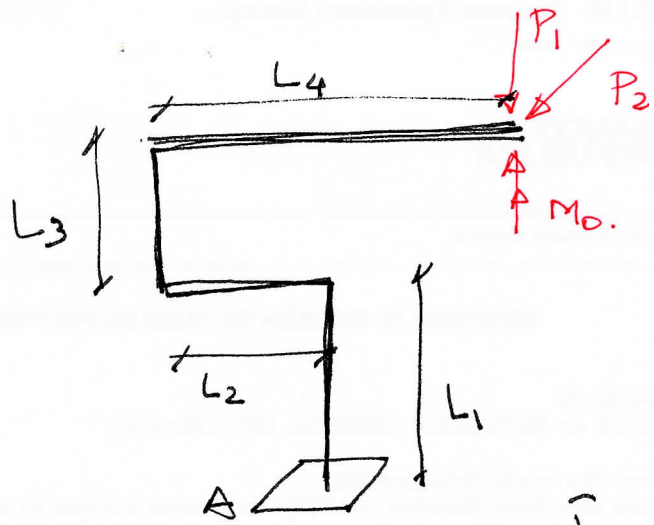
DIRECTO: P_1 (COMPRESIÓN)

TORSIÓN: $(M_0 - P_2 \cdot (L_4 - L_2)) \hat{k}$

CORTANTE: $P_2 (-\hat{j})$

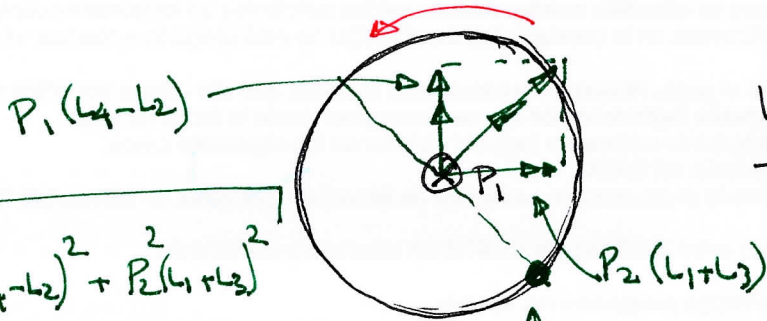
FLEXIÓN: $P_1 \cdot (L_4 - L_2) \cdot \hat{j}$

+ $P_2 (L_1 + L_3) \cdot \hat{i}$



$V = P_2$

$T = M_0 - P_2(L_4 - L_2)$



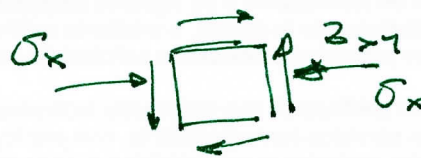
$$M = \sqrt{P_1^2 (L_4 - L_2)^2 + P_2^2 (L_1 + L_3)^2}$$

~~Moment~~
= 3,16 kNm

$T = 2 \text{ kNm}$ $V = 2 \text{ kN}$

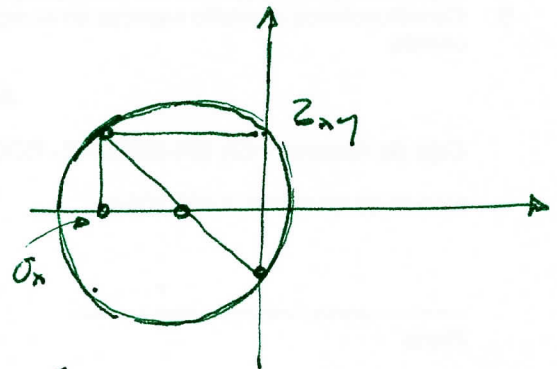
$D = -1 \text{ kN (COMPRESIÓN)}$

A COMPRESIÓN EN FLEXIÓN



$$\sigma_x = -\left(\frac{M r}{\frac{\pi r^4}{4}} + \frac{P_1}{\frac{\pi r^2}{2}}\right) = -258,5 \text{ MPa}$$

$$\tau_{x7} = \frac{T r}{\frac{\pi r^3}{2}} = 81,5 \text{ MPa}$$



$C = \frac{\sigma_x}{2} = -129 \text{ MPa}$

$\sigma_{max} = 152,8 \text{ MPa}$

$\sigma_1 = 27,3 \text{ MPa}, \sigma_2 = -284,3 \text{ MPa}$

$\sigma_3 = 0$