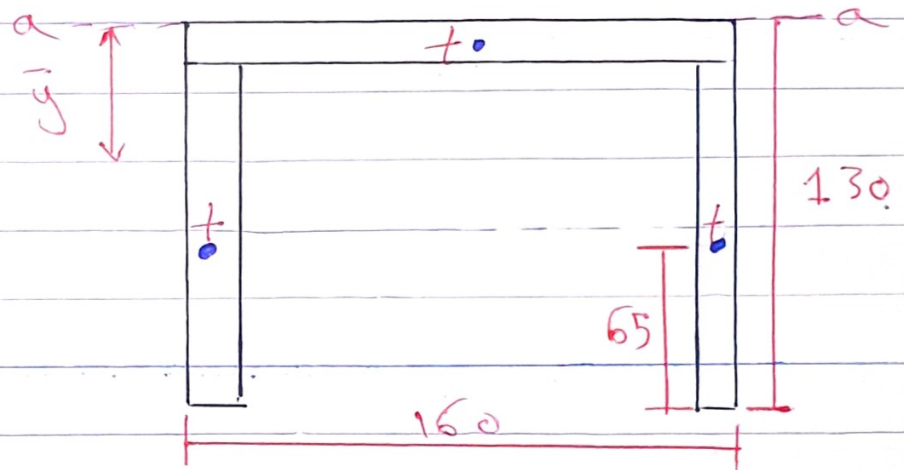
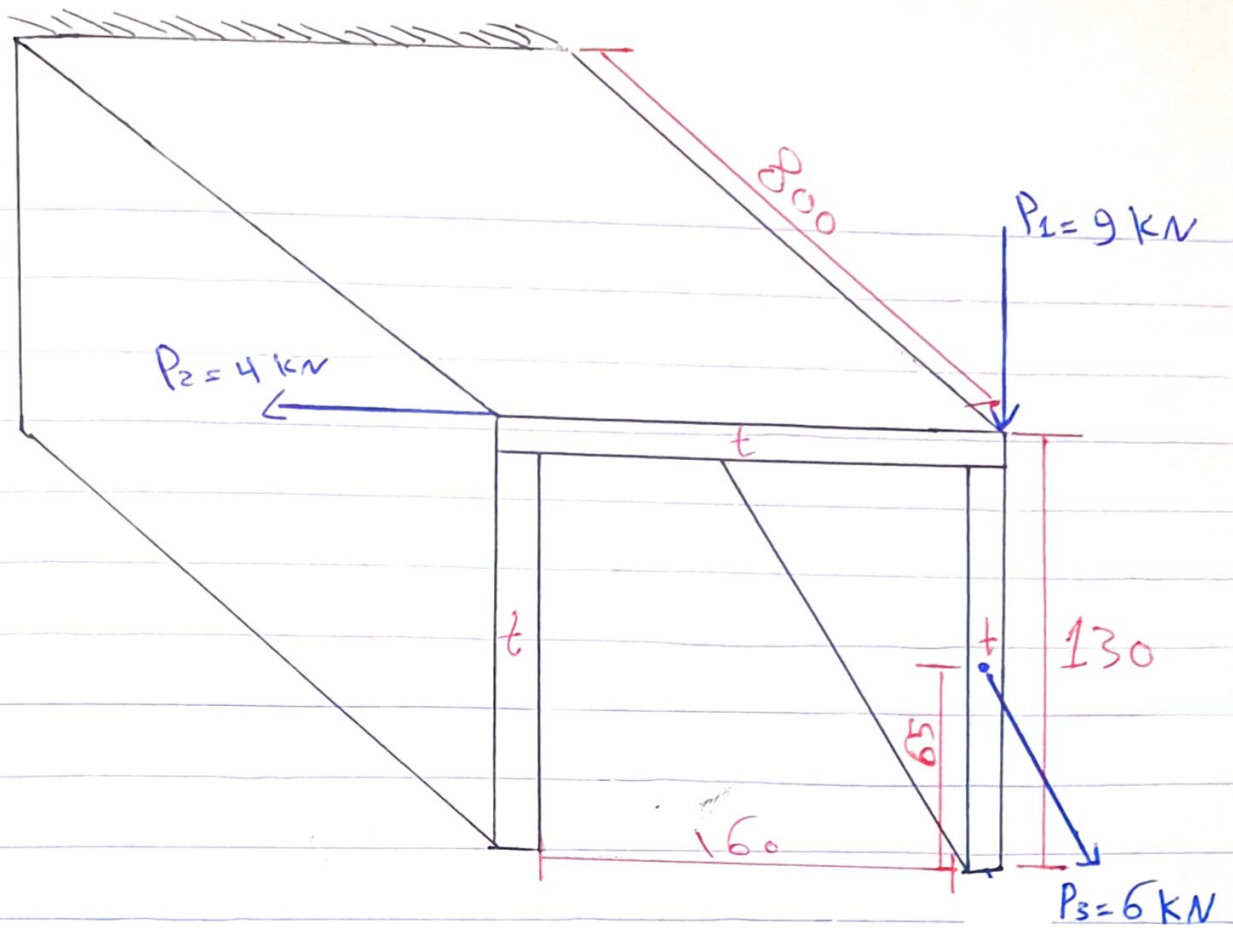


سيف محمد علم

المرحلة الثالثة

الميكانيك العام

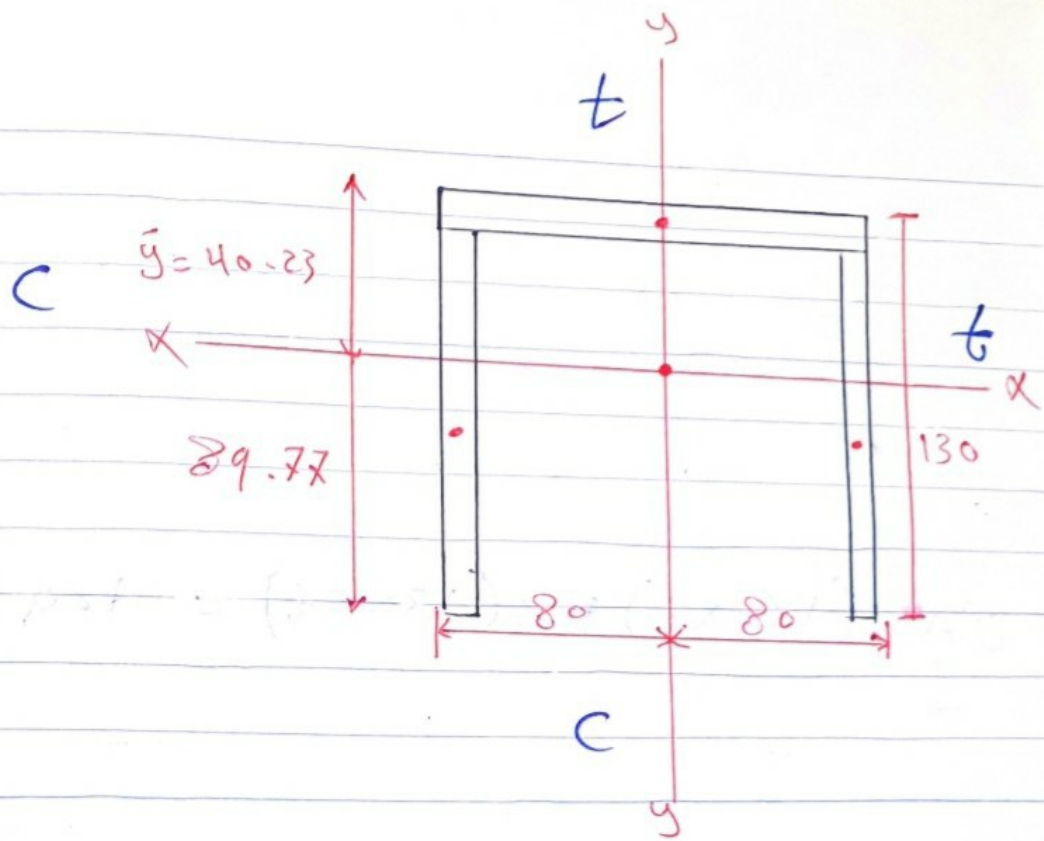
Design



$$\bar{y} = \frac{\sum A \bar{y}}{\sum A}$$

$$\bar{y} = \frac{(160 \times t)(0) + 2[(130 \times t)(65)]}{(160 \times t) + 2[(130 \times t)]}$$

$$\bar{y} = 40.23 \text{ mm}$$



$$I_x = I_{cx} + Ad^2$$

$$I_x = \frac{(160 \times t^3)}{12} + (160 \times t) (40.23)^2$$

$$+ 2 \left[\frac{(t \times 130^3)}{12} + (130 \times t) (89.77 - 65)^2 \right]$$

$$I_x = 521797.67 t \text{ mm}^4$$

$$I_y = I_{cy} + Ad^2$$

$$I_y = \frac{(t \times 160^3)}{12} + 0 + 2 \left[\frac{(130 \times t^3)}{12} + (130 \times t) (80)^2 \right]$$

$$I_y = 2005333.3 t \text{ mm}^4$$

$$\delta = \frac{\Sigma M_c}{I} + \frac{P}{A}$$

$$\delta(x)_t = \frac{\left[(9 \times 10^3 \times 800) - (6 \times 10^3 \times (89.77 - 65)) \right] \times 40.23}{521797.67 \text{ t}} + \frac{6 \times 10^3}{420 \text{ t}}$$

$$\delta(x)_t = \frac{557.938}{\text{t}}$$

$$\delta(x)_{cs} = \frac{\left[(9 \times 10^3 \times 800) - (6 \times 10^3 \times (89.77 - 65)) \right] \times 89.77}{2005333.3 \text{ t}} - \frac{6 \times 10^3}{420 \text{ t}}$$

$$\delta(x)_c = \frac{301.373}{\text{t}}$$

$$S_y)_t = \frac{[(4 \times 10^3 \times 800) + (6 \times 10^3 \times 80)] \times 80}{2005333.3 \text{ t}} + \frac{6 \times 10^3}{420 \text{ t}}$$

$$S_y)_t = \frac{161.09}{\text{t}}$$

$$S_y)_c = \frac{[(4 \times 10^3 \times 800) + (6 \times 10^3 \times 80)] \times 80}{2005333.3 \text{ t}} - \frac{6 \times 10^3}{420 \text{ t}}$$

$$S_y)_c = \frac{132.522}{\text{t}}$$

$$\begin{aligned} \sigma_x)_t + \sigma_y)_t &= \frac{557.938}{t} + \frac{161.09}{t} \\ &= \frac{719.028}{t} \end{aligned}$$

$$\begin{aligned} \sigma_y)_c + \sigma_x)_c &= \frac{132.522}{t} + \frac{301.373}{t} \\ &= \frac{433.895}{c} \end{aligned}$$

$t > c \therefore$ tension Δl