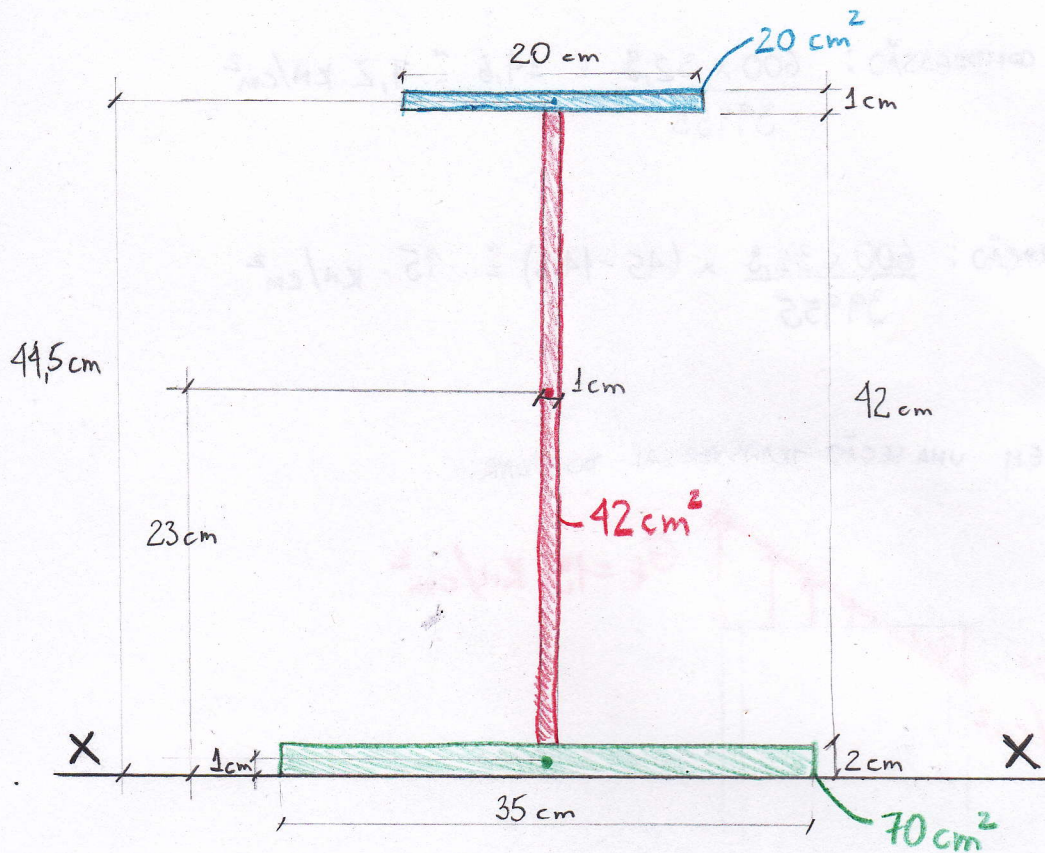


ENCONTRANDO A ALTURA DO CENTRO DE GRAVIDADE DA SEÇÃO ( $y_G$ ):

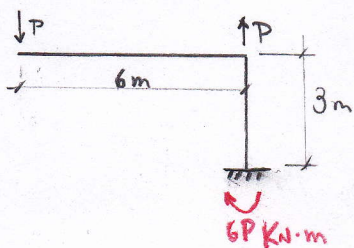


DADO:

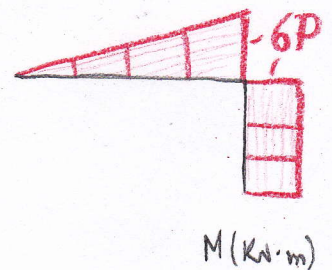
$I_x = 68092 \text{ cm}^4$

$$y_G = \frac{(44,5 \text{ cm} \times 20 \text{ cm}^2) + (23 \text{ cm} \times 42 \text{ cm}^2) + (1 \text{ cm} \times 70 \text{ cm}^2)}{20 + 42 + 70} \approx 14,6 \text{ cm}$$

$$I_{xG} = 68092 - (14,6)^2 \cdot 132 \approx 39955 \text{ cm}^4$$



$6 \times P \text{ kN}\cdot\text{m} = 600 \times P \text{ kN}\cdot\text{cm}$



COMPRESSÃO:  $\frac{600 \cdot P}{39955} \cdot 14,6 \leq 10 \therefore P \leq 45,61 \text{ kN}$

TENSÃO:  $\frac{600 \cdot P}{39955} \cdot (45 - 14,6) \leq 15 \therefore P \leq 32,85 \text{ kN}$

POR SEGURANÇA, ADOTA-SE O MENOR VALOR. PORTANTO,  $P_{\text{MÁX}} \approx 32,8 \text{ kN}$