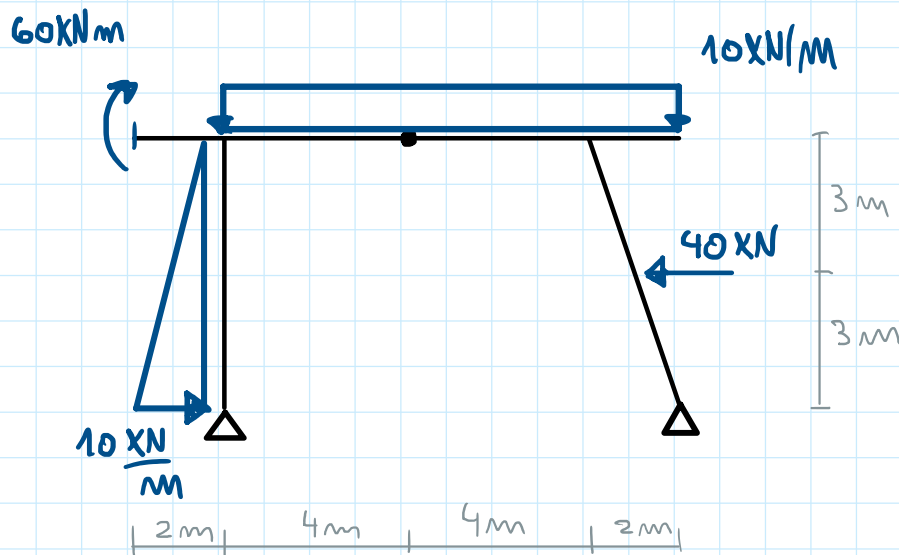
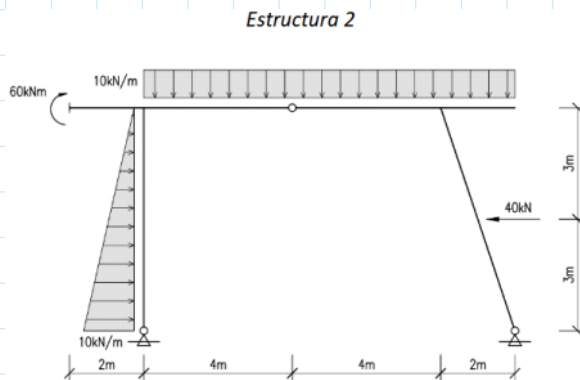
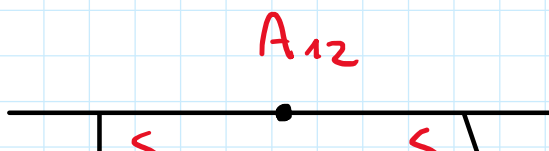


Para las siguientes estructuras planas, se pide:

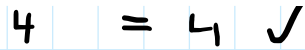
1. Análisis cinemático;
2. Cálculo de reacciones de vínculo externo;
3. Diagramas de esfuerzos característicos (dibujar los diagramas en la estructura completa);
4. Equilibrio de todos los nudos; ★
5. Hacer el despiece de la estructura mostrando que cada chapa está en equilibrio
6. Determinar el valor y la posición del momento flector de dimensionamiento.



Ac



$$\begin{aligned}
 C_V &= G_L \\
 \Delta + \Delta &= 2 + 2 \\
 4 &= 4 \quad \checkmark
 \end{aligned}$$



- ∴ Investigation

$$\sum M_A^{\text{Glob}} = 10 \text{ m} \cdot V_B + 3 \text{ m} \cdot 40 \text{ kN} - 5 \text{ m} \cdot 10 \text{ kN} \cdot \frac{10 \text{ m}}{2} - 60 \text{ kNm} - 10 \frac{\text{kN}}{\text{m}} \cdot 6 \text{ m} / 2 \cdot 2 \text{ m} = 0$$

$$V_B = 50 \text{ kN} \quad \checkmark$$

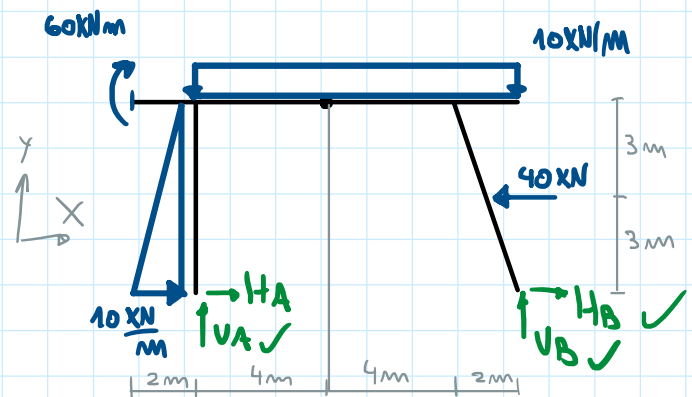
$$\sum F_v = \underbrace{V_B}_{50 \text{ kN}} + V_A - 10 \frac{\text{kN}}{\text{m}} \cdot 10 \text{ m} = 0$$

$$V_A = 50 \text{ kN} \quad \checkmark$$

$$\sum M_{A12}^{S2} = -10 \frac{\text{kN}}{\text{m}} \cdot 6 \text{ m} \cdot 3 \text{ m} - 40 \text{ kN} \cdot 3 \text{ m} + 6 \text{ m} H_B$$

$$+6 \text{ m} \underbrace{V_B}_{50 \text{ kN}} = 0$$

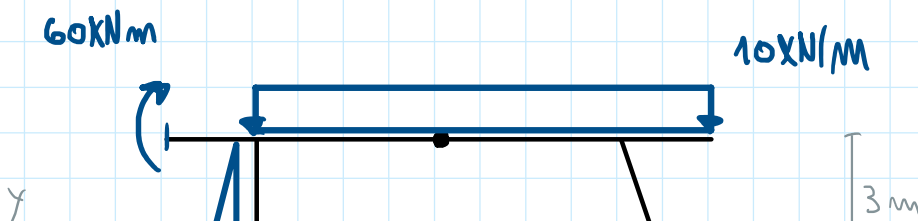
$$H_B = 0 \quad \checkmark$$

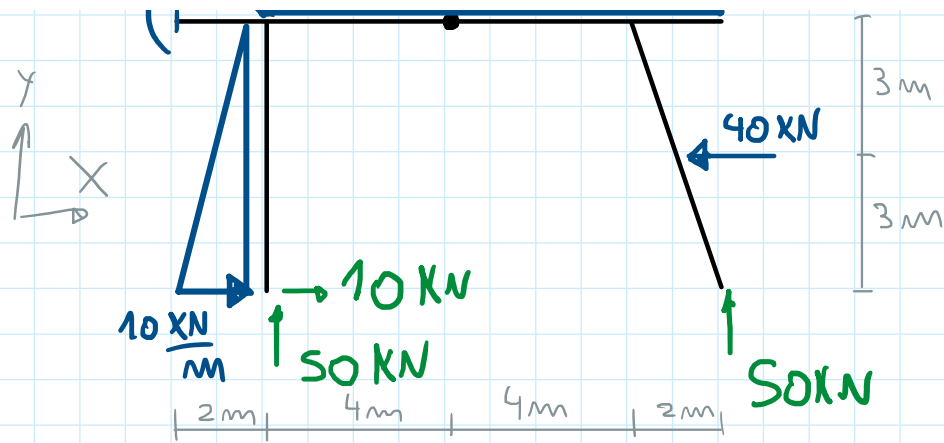


$$\sum F_h = 0 = H_A + \underbrace{H_B}_0 + 10 \frac{\text{kN}}{\text{m}} \cdot \frac{6 \text{ m}}{2} - 40 \text{ kN}$$

$$H_A = 10 \text{ kN} \quad \checkmark$$

DCL





Diagramas

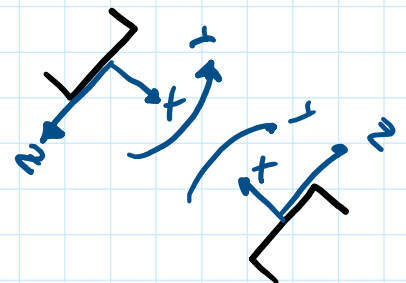
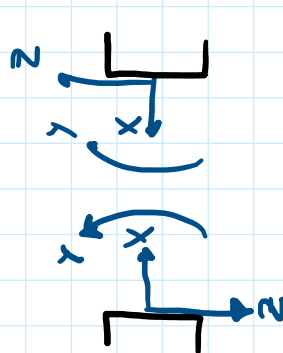
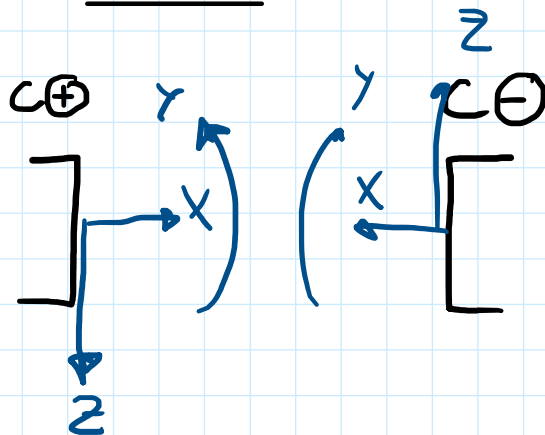
Rel Diferenciales

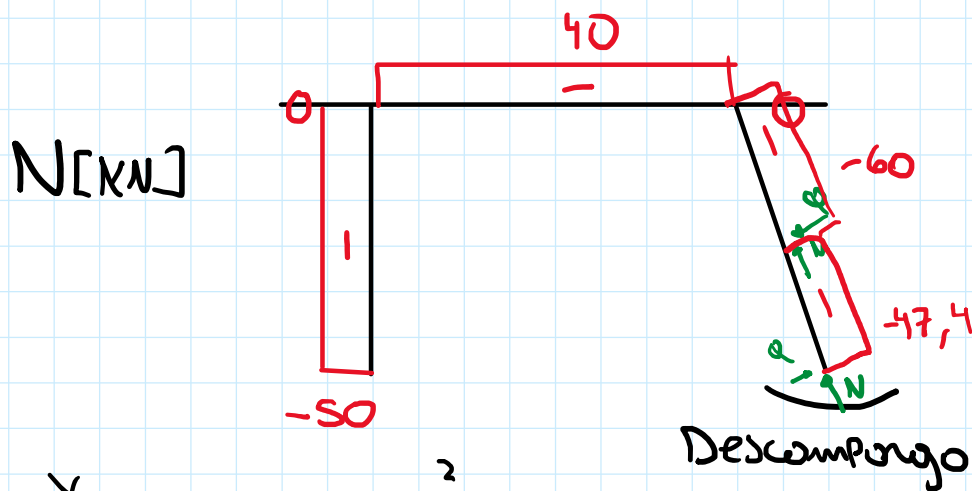
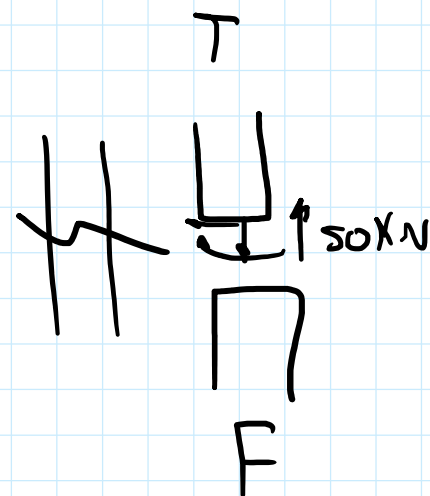
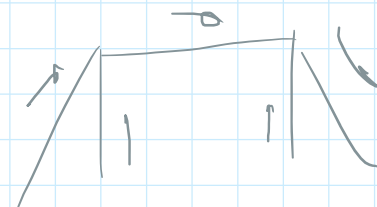
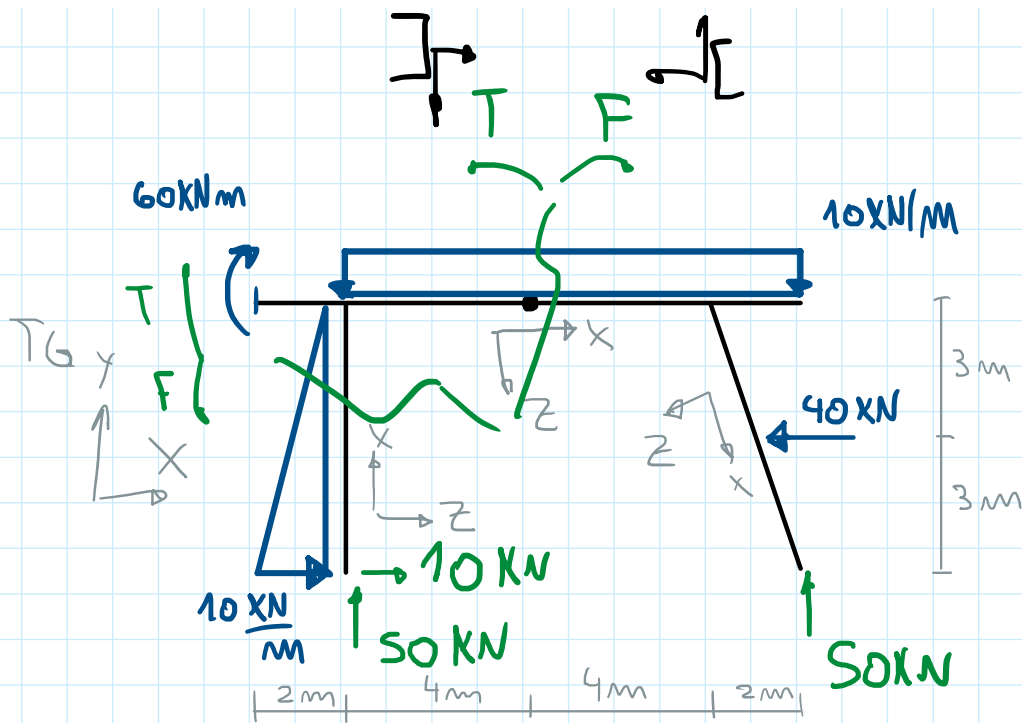
$$\frac{dN}{dx} = -q_x$$

$$\frac{dQ_z}{dx} = -q_z$$

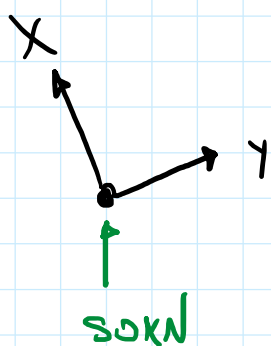
$$\frac{dM_z}{dx} = Q_y$$

caras

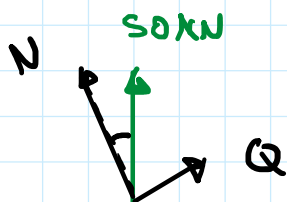
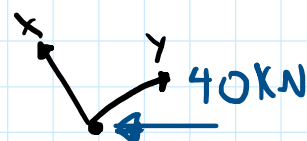




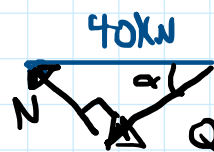
Descompongo



$$\tan^{-1}\left(\frac{2}{6}\right) = 18,4^\circ$$



$$N = 50 \cos \alpha = 47,4 \text{ kN}$$



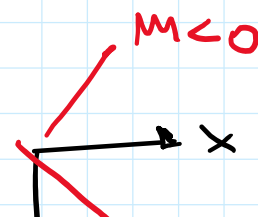
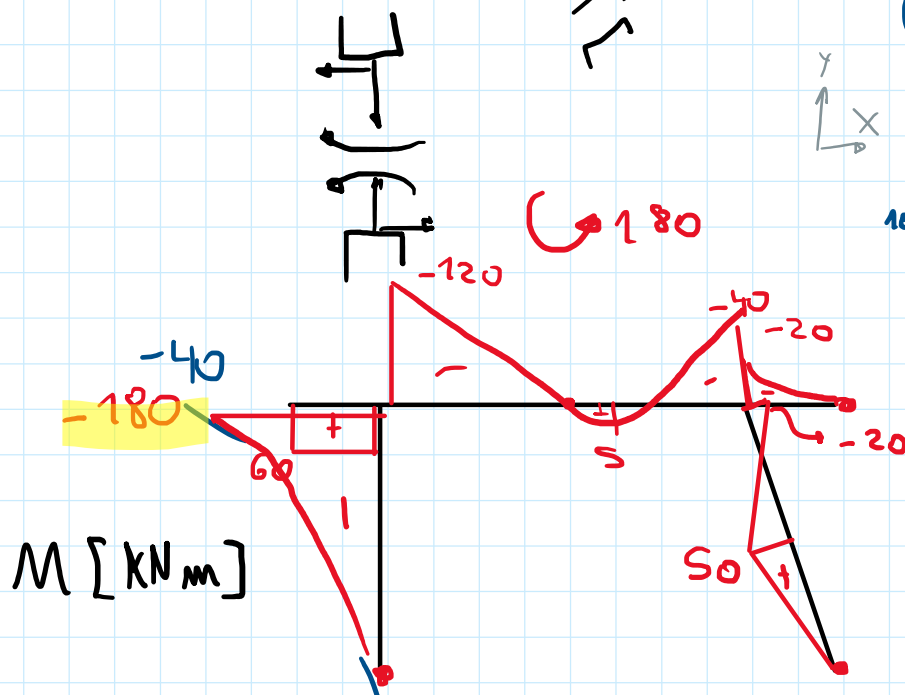
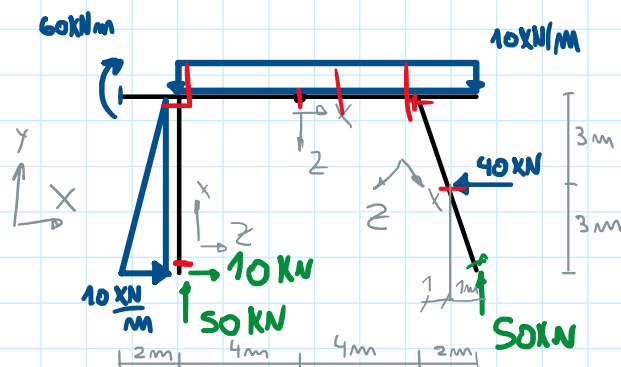
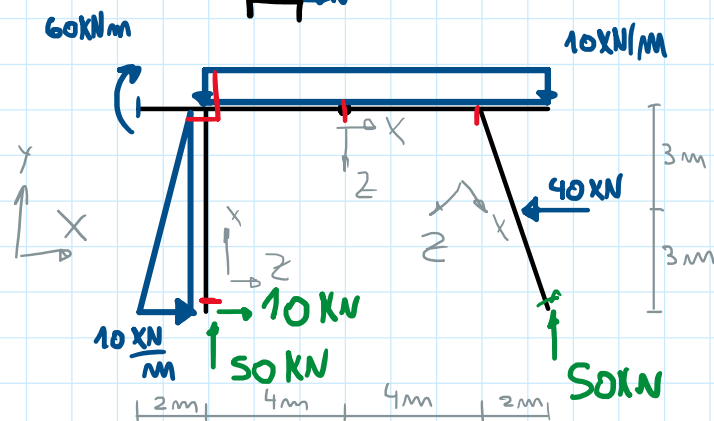
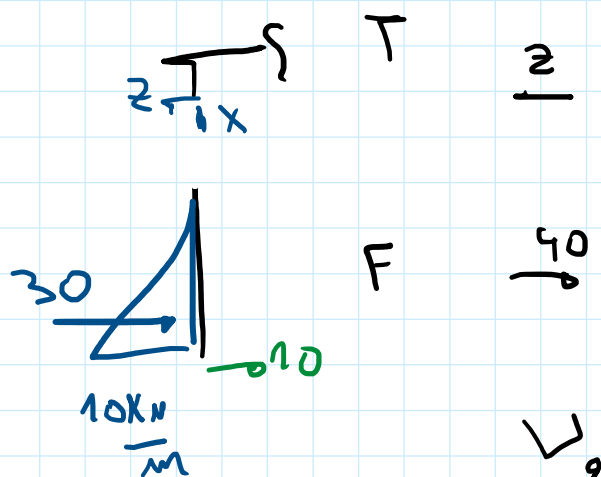
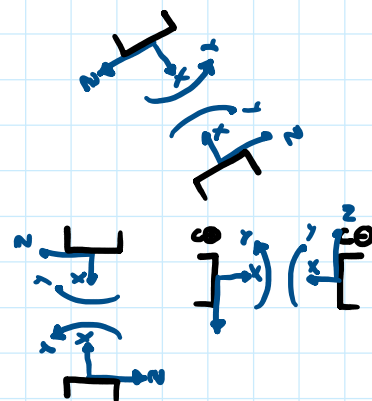
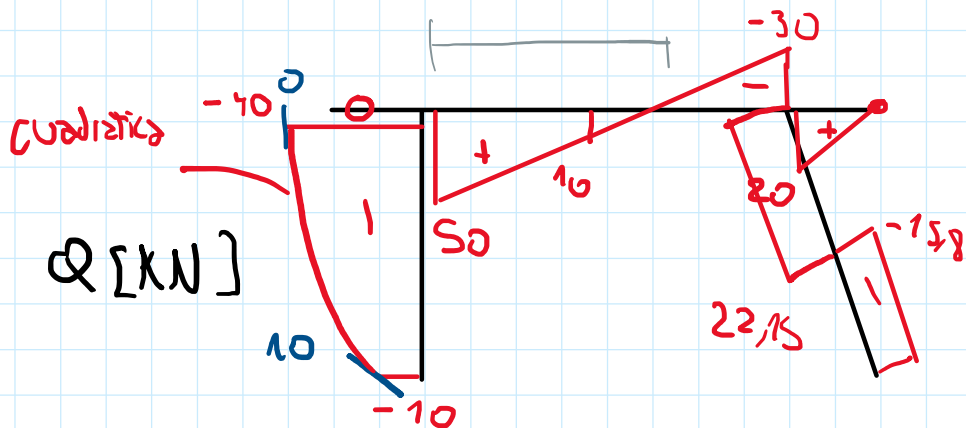
$$N = 40 \cos \alpha = 12,6 \text{ kN}$$

$$N = 50 \cos \alpha = 47,4 \text{ kN}$$

$$Q = 50 \sin \alpha = 15,8 \text{ kN}$$

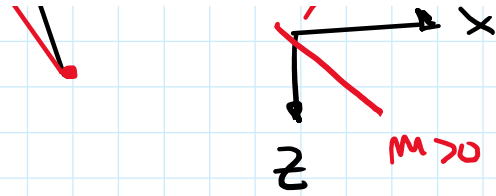
$$N = 40 \sin \alpha = 12,6 \text{ kN}$$

$$Q = 40 \cos \alpha = 37,95 \text{ kN}$$

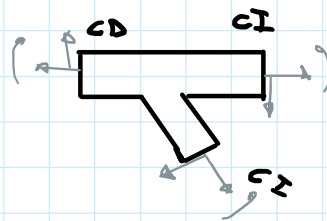
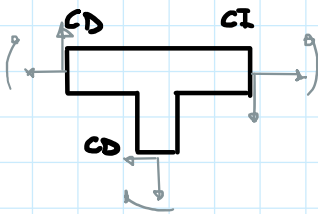




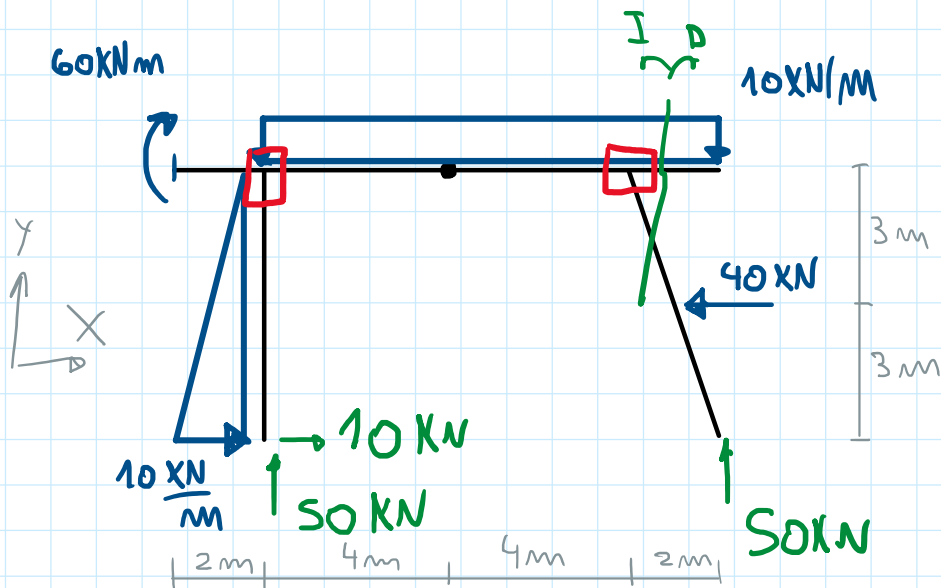
 Valor del
 fig. de Q.



Equilibrio de Nudos







Fuerzas
 Momentos

