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Licenciatura: Arquitectura

Cuatrimestre: 3

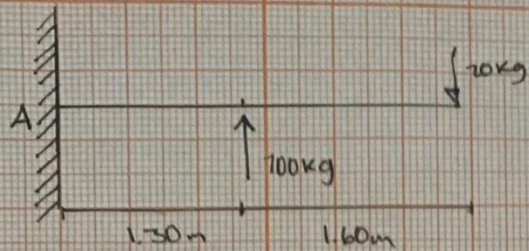
Materia: Estática para la arquitectura

Profesor: García López Pedro Alberto

Actividad: **TRABAJO VIRTUAL**

Fecha: 09/07/2023

①



$$M_A = (100 \text{ kg} \cdot 1.30 \text{ m}) - (20 \text{ kg} \cdot 1.60 \text{ m})$$

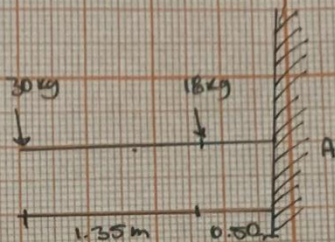
$$M_A = 130 \text{ kg} \cdot \text{m} - 58 \text{ kg} \cdot \text{m}$$

$$M_A = 72 \text{ kg} \cdot \text{m}$$

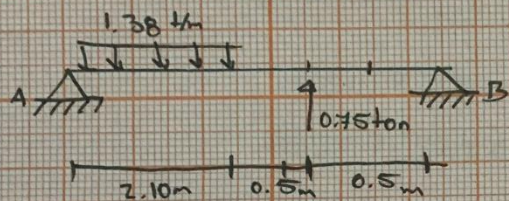
$$M_A = (18 \text{ kg} \cdot 0.50 \text{ m}) + (30 \text{ kg} \cdot 1.85 \text{ m})$$

$$M_A = 9 \text{ kgm} + 55.5 \text{ kgm}$$

$$M_A = 64.5 \text{ kgm}$$



②



$$P = W \cdot L \quad P = (1.38 \text{ t/m} \cdot 2.10 \text{ m}) = 2.898$$

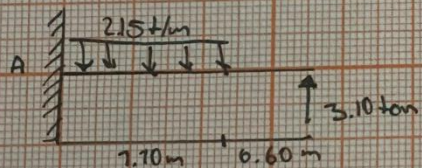
$$U_P = \frac{L}{2} \quad U_P = 1.05 \text{ m}$$

$$M_A = (-2.898 \cdot 1.05) + (0.75 \text{ ton} \cdot 2.60 \text{ m})$$

$$M_A = -3.042 \text{ ton} \cdot \text{m} + 1.95 \text{ ton} \cdot \text{m}$$

$$M_A = -1.092 \text{ ton} \cdot \text{m}$$

③



$$M_A = 2.15 \text{ t/m} \cdot 1.10 \text{ m} = 2.365 \text{ ton}$$

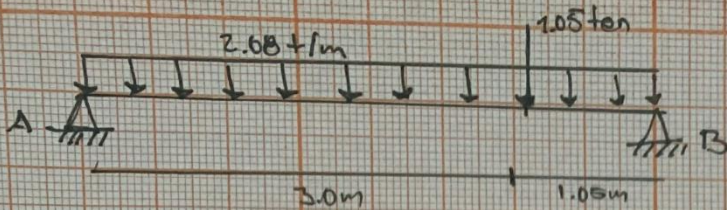
$$U_P = \frac{1.10}{2} = 0.55 \text{ m}$$

$$M_A = -(2.365 \text{ ton} \cdot 0.55 \text{ m}) + (3.10 \text{ ton} \cdot 1.70) =$$

$$M_A = -1.300 + 5.27$$

$$M_A = 3.97 \text{ ton} \cdot \text{m}$$

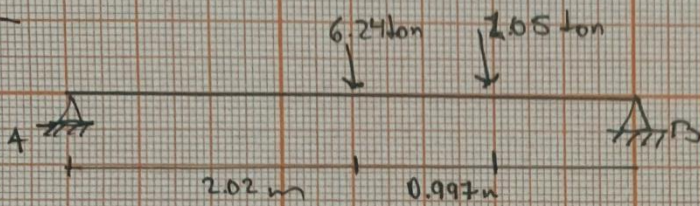
④



$$P = 2.08 \text{ t/m} \cdot 4 \text{ m} = 8.32 \text{ ton}$$

$$UP = 4.05 / 2 = 2.02 \text{ m}$$

DCL



$$M_A = (8.32 \text{ ton} \cdot 2.02 \text{ m}) + (1.05 \text{ ton} \cdot 3 \text{ m}) + 4.05 M_B$$

$$M_A = 17.058 \text{ ton}\cdot\text{m} + 3.15 \text{ ton}\cdot\text{m} = 4.05 M_B$$

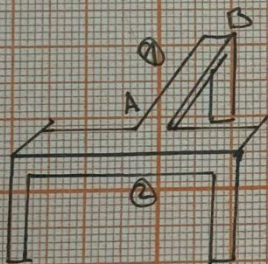
$$M_B = \frac{20.208 \text{ ton}\cdot\text{m}}{4.05 \text{ m}} = 4.989 \text{ ton}$$

$$M_A = 4.989 \text{ ton} - 8.424 \text{ ton} - 1.05 \text{ ton}$$

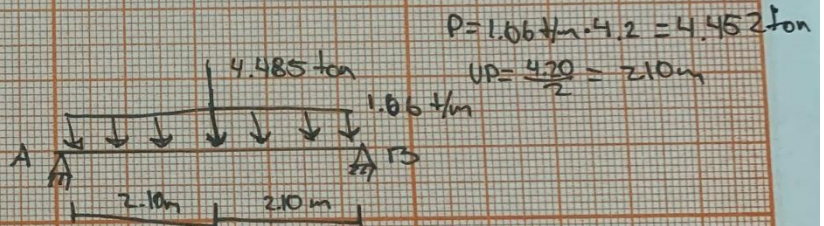
$$M_A = 4.485 \text{ ton}$$

$$\Sigma F_y = 4.485 \text{ ton} + 4.989 \text{ ton} - 8.424 \text{ ton} - 1.05 \text{ ton} = 0$$

⑤



①



$$P = 1.06 \text{ t/m} \cdot 4.2 = 4.452 \text{ ton}$$

$$UP = \frac{4.20}{2} = 2.10 \text{ m}$$

$$M_A = (4.452 \text{ ton} \cdot 2.10) + 4.2 M_B$$

$$M_B = \frac{18.767 \text{ ton}\cdot\text{m}}{4.2 \text{ m}} = 4.468 \text{ ton}$$

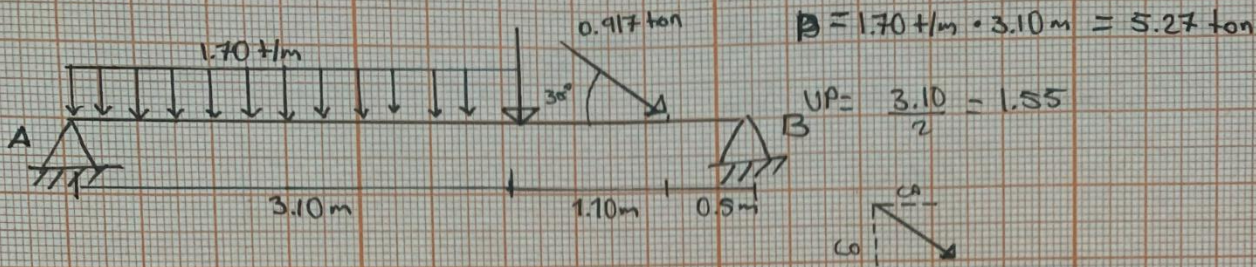
$$M_A = 4.989 \text{ ton} - 8.424 \text{ ton} - 1.05 \text{ ton}$$

$$M_A = 4.485 \text{ ton}$$

$$\Sigma F_y = 4.989 \text{ ton} + 4.485 \text{ ton} - 8.424 \text{ ton} - 1.05 \text{ ton}$$

$$\Sigma F_y = 0$$

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$$M_A = (5.27 \text{ ton} \cdot 1.55 \text{ m}) + (0.525 \text{ ton} \cdot 4.20 \text{ m}) + 4.20 \text{ m } M_B \quad \begin{matrix} C_0 = \text{Sen } \theta (H) \\ C_0 = 0.573 (0.917) \\ C_0 = 0.525 \text{ ton (X)} \end{matrix} \quad \begin{matrix} C_A = \text{Cos } \theta (V) \\ C_A = 0.819 (0.917) \\ C_A = 0.751 (Y) \end{matrix}$$

$$M_A = 8.168 \text{ ton}\cdot\text{m} + 2.208 \text{ ton}\cdot\text{m} + 4.20 \text{ m } M_B$$

$$\frac{10.337 \text{ ton}\cdot\text{m}}{4.2 \text{ m}} = M_B$$

$$M_B = 2.207 \text{ ton}$$

$$\sum F_y = -5.27 \text{ ton} - 0.525 \text{ ton} + 2.207 \text{ ton} + 3.588 \text{ ton}$$

$$M_A = 5.27 \text{ ton} + 0.525 \text{ ton} - 2.207 \text{ ton}$$

$$\sum F_x = 0$$

$$M_A = 3.588 \text{ ton}$$