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Nombre del trabajo: Evaluación III

Materia: Estática para la arquitectura.

Grado: 3er CUATRIMESTRE

Grupo:A

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EJERCICIO A-B TRABAJO 1

$$P = w \cdot L$$

$$UP = L/2$$

$$P = 1 \text{ t/m} (3\text{m}) = 3 \text{ t}$$

$$UP = 5/2 = 2.5 \text{ m}$$

$$\sum F_x = 0 \rightarrow Ax + Bx = 0$$

$$\sum MA = 0 \rightarrow -3 + (2.5\text{m}) - 0.8 \text{ t} + By (5\text{m})$$

$$-7.5 \text{ t} \cdot \text{m} - 0.8 \text{ t} \cdot \text{m} + By \cdot 5 \text{ m} = 0$$

$$-7.3 \text{ t} \cdot \text{m} - 0.8 \text{ t} \cdot \text{m} + By \cdot 5 \text{ m} = 0$$

$$-8.3 \text{ t} \cdot \text{m} + By (5\text{m}) = 0 \quad \text{m} + By (5\text{m}) = 0$$

$$By = \frac{8.3 \text{ t} \cdot \text{m}}{5} = 1.66 \text{ t}$$

$$\sum F_y = 0 \rightarrow -3 - 0.8 \text{ t} + 1.66 \text{ t} = 0$$

$$\sum F_y = 0 \rightarrow -3 + -0.8 \text{ t} + 1.66 \text{ t} = 0$$

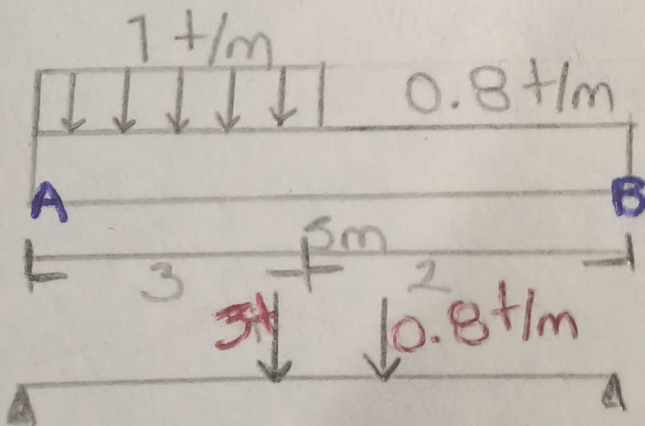
$$Ay = 3.8 \text{ t} + 1.66 = 0$$

$$Ay = -2.14 = 0 \quad Ay = 2.14$$

$$Ay = 2.14$$

com

$$2.14 \text{ t} - 3 \text{ t} - 0.8 \text{ t} + 1.66 \text{ t} = 0$$



EJERCICIO

B-D

TRABE 2

$$P(w \cdot L) / 2$$

$$P = 1.1 \text{ t/m} (5 \text{ m} / 2) = 2.75 \text{ t}$$

$$V_P = 1/3 (2)$$

$$1/3 (5/1) = 5/3 = 1.66$$

$$\sum F_x = 0 \rightarrow B_x + D_x = 0$$

$$\sum M_B = 0 \rightarrow -2.75 (3.333 \text{ m}) + D_y (5 \text{ m}) = 0$$

$$-9.1575 \text{ t} + D_y \cdot 5 \text{ m} = 0$$

$$D_y = \frac{9.1575 \text{ t/m}}{5 \text{ m}} = 1.8315 \text{ t}$$

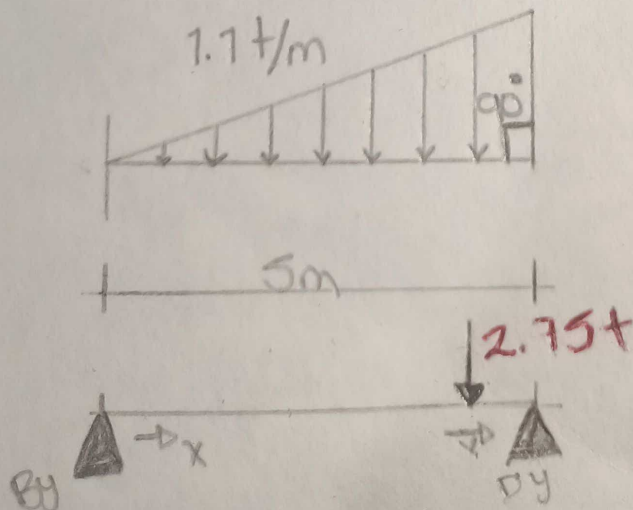
$$\sum F_y = 0 \rightarrow B_y - 2.75 \text{ t} + 1.8315 \text{ t}$$

$$B_y - 0.9185 \text{ t} = 0$$

$$B_y = 0.9185 \text{ t}$$

Com

$$0.9185 - 2.75 + 1.8315 = 0$$



EJERCICIO C-D

TRABE 3

$$P = w \cdot L$$

$$P = 1.1 \text{ t/m} (5 \text{ m}) = 5.5 \text{ t}$$

$$U_P = L/2$$

$$U_P = 5/2 = 2.5 \text{ m}$$

$$\sum F_x = 0 \rightarrow C_x + D_x = 0$$

$$\sum M_C = 0 \rightarrow -5.5 \text{ t} (2.5 \text{ m}) + D_y (5 \text{ m}) = 0$$

$$-13.75 \text{ t} \cdot \text{m} + D_y \cdot 5 \text{ m}$$

$$D_y = \frac{13.75 \text{ t} \cdot \text{m}}{5 \text{ m}} = 2.75 \text{ t}$$

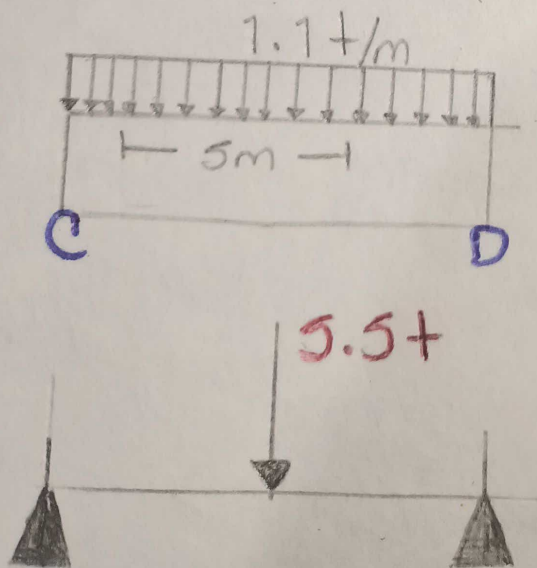
$$\sum F_y = C_y - 5.5 + 2.75 = 0$$

$$C_y - 2.75 = 0$$

$$C_y = 2.75$$

Com

$$2.75 - 5.5 + 2.75 = 0$$



$$B_y = 0.9185t$$

EJERCICIO

C-A

TRABE 4

$$F_x = 0 \rightarrow C_x + A_x = 0$$

$$\sum M_C = -4.2 + (1.1m) + A_y(5m) = 0$$

$$-4.2 + 1.1 + A_y \cdot 5m = 0$$

$$A_y = \frac{4.62 + 1.1}{5m} = 0.924t$$

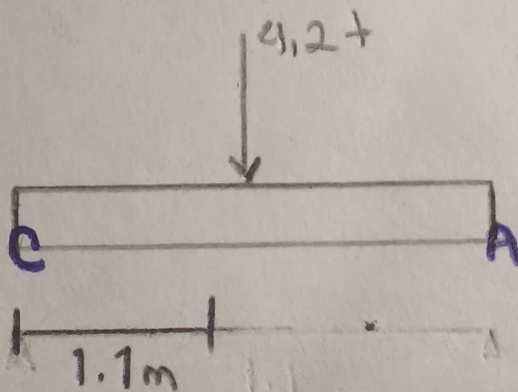
$$\sum F_y = C_y - 4.2 + 0.924 = 0$$

$$C_y - 3.276 = 0$$

$$C_y = 3.276$$

Com.

$$3.276 - 4.2 + 0.924 = 0$$



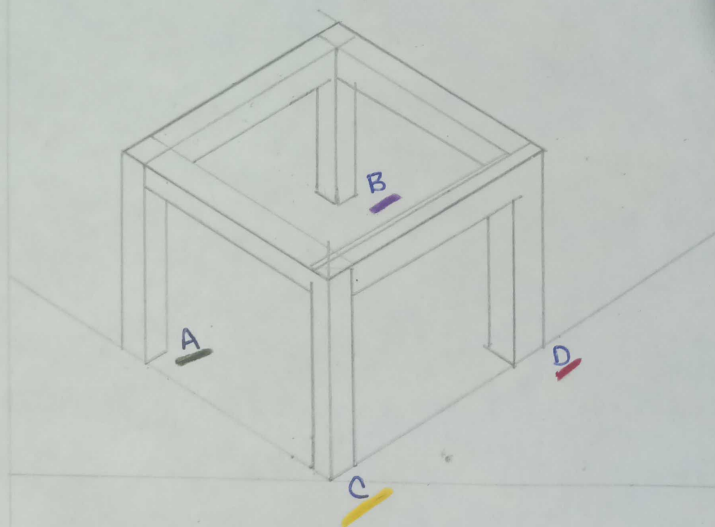
SUMATORIO TOTAL

$$\underline{\sum A_y} = 2.14t + 0.924t \\ = 3.344t$$

$$\underline{\sum B_y} = 1.66t + 0.9185t \\ = 2.5785t$$

$$\underline{\sum C_y} = 2.75t + 3.276t \\ = 6.026t$$

$$\underline{\sum D_y} = 1.8315t + 2.75 \\ = 4.5815$$



SUMATORIO TOTAL

$$\begin{aligned}\underline{\sum A_y} &= 2.14t + 0.924t \\ &= 3.344t\end{aligned}$$

$$\begin{aligned}\underline{\sum B_y} &= 1.66t + 0.9185t \\ &= 2.5785t\end{aligned}$$

$$\begin{aligned}\underline{\sum C_y} &= 2.75t + 3.276t \\ &= 6.026t\end{aligned}$$

$$\begin{aligned}\underline{\sum D_y} &= 1.8315t + 2.75t \\ &= 4.5815t\end{aligned}$$

