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**Nombre del trabajo: EQUILIBRIO UN
CUERPO RÍGIDO**

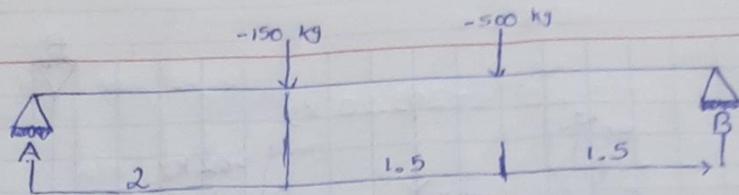
PASIÓN POR EDUCAR

Materia: Estática para la arquitectura

Grado: 2do

Grupo: "A"

Comitán de Domínguez Chiapas a 08 de julio de 2021.



$$\sum F_x = 0 \rightarrow A_x - B_x = 0 \rightarrow A_x = B_x$$

$$\sum F_y = A_y + 150 \text{ kg} - 500 \text{ kg} + B_y = 0$$

$$\sum F_y = A_y - 650 + B_y = 0$$

$$\sum M = 0$$

$$\sum M = -150 \text{ kg} (2 \text{ m}) - 500 \text{ kg} (3.5 \text{ m}) + B_y (5 \text{ m}) = 0$$

$$\sum M = -300 \text{ kg}\cdot\text{m} - 1750 \text{ kg}\cdot\text{m} + 5B_y = 0$$

$$\sum M = -2050 \text{ kg}\cdot\text{m} + 5B_y = 0$$

$$\sum M = 5B_y = 2050 \text{ kg}\cdot\text{m}$$

$$\sum M = B_y = \frac{2050 \text{ kg}\cdot\text{m}}{5 \text{ m}}$$

$$B_y = 410 \text{ kg}$$

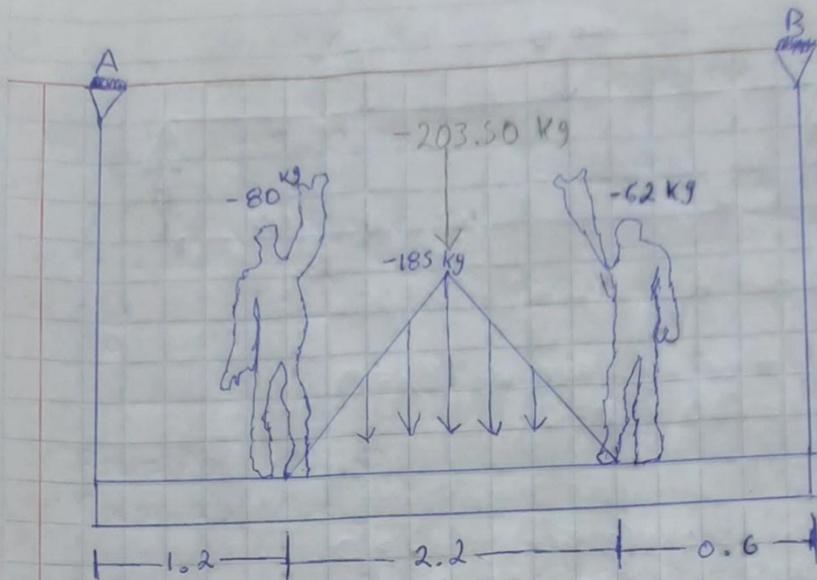
$$\sum M = A_y - 650 + 410 = 0$$

$$\sum M = A_y - 240 = 0$$

$$\sum M = A_y = 240 \text{ kg}$$

comprobación

$$240 \text{ kg} - 150 \text{ kg} - 500 \text{ kg} + 410 \text{ kg} = 0$$



$$\sum F_x = 0 \quad A_x - B_x = 0 \quad A_x = B_x$$

$$\sum F_y = A_y - 80 \text{ kg} - 203.50 \text{ kg} - 62 \text{ kg} + B_y = 0$$

$$\sum F_y = -A_y - 345.50 \text{ kg} - B_y = 0$$

$$\sum M = 0$$

$$\sum M = -80 \text{ kg} (1.2 \text{ m}) - 203.50 \text{ kg} (2.30) - 62 \text{ kg} (3.40) - B_y (4) = 0$$

$$\sum M = -96 \text{ kg}\cdot\text{m} - 468.05 \text{ kg}\cdot\text{m} - 210.80 \text{ kg}\cdot\text{m} - 4B_y = 0$$

$$\sum M = -774.85 \text{ kg}\cdot\text{m} - 4B_y = 0$$

$$\sum M = B_y = 774.85 \text{ kg}$$

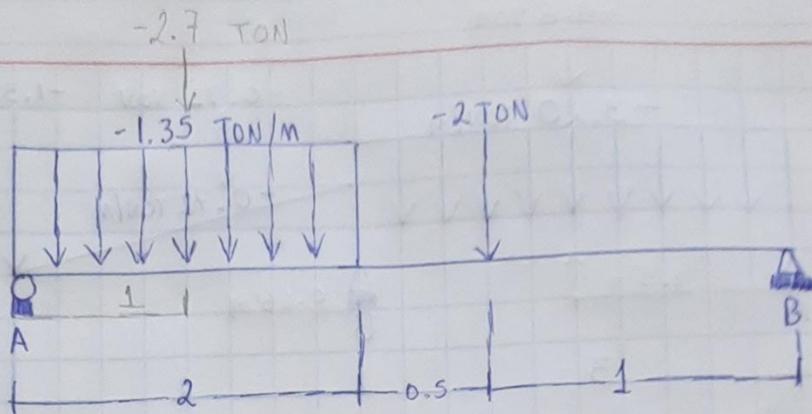
$$\sum M = B_y = 774.85 \text{ kg}$$

$$\sum M = B_y = -193.7125 \text{ kg}$$

$$-A_y - 345.50 \text{ kg} - 193.7125 \text{ kg} = 0$$

$$-A_y = 151.7875 = 0$$

$$A_y = -151.7875 \text{ kg}$$



$$\sum F_x = A_x - B_x = 0 \rightarrow A_x = B_x$$

$$\sum F_y = A_y - 2.7 \text{ TON} - 2 \text{ TON} + B_y = 0$$

$$\sum F_y = A_y - 4.7 \text{ TON} + B_y = 0$$

$$\sum M = 0$$

$$\sum M = 2.7 \text{ TON} \cdot 0 \text{ m} - 2 \text{ TON} \cdot (2.5 \text{ m}) + B_y \cdot (3.5 \text{ m}) = 0$$

$$\sum M = -2.7 \text{ TON} \cdot 0 \text{ m} - 5 \text{ TON} \cdot \text{m} + B_y \cdot (3.5 \text{ m}) = 0$$

$$\sum M = -7.7 \text{ TON} \cdot \text{m} + 3.5 B_y = 0$$

$$\sum M = 3.5 B_y = 7.7 \text{ TON} \cdot \text{m}$$

$$\sum M = B_y = \frac{7.7 \text{ TON} \cdot \text{m}}{3.5 \text{ m}}$$

$$B_y = \boxed{2.2 \text{ TON.}}$$

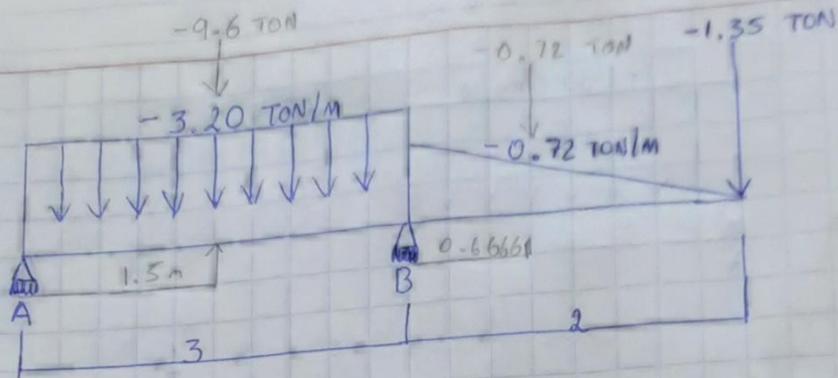
$$A_y - 4.7 \text{ TON} + 2.2 \text{ TON} = 0$$

$$A_y - 2.5 \text{ TON} = 0$$

$$A_y = \boxed{2.5 \text{ TON.}}$$

(continued)

2.5 - 4.70



$$\sum F_x = A_x - B_x = 0$$

$$\sum F_x = A_x = B_x$$

$$\sum F_y = A_y - 9.6 \text{ TON} - 0.72 \text{ TON} - 1.35 \text{ TON} = 0$$

$$\sum F_y = A_y - 11.67 \text{ TON} + B_y = 0$$

$$\sum M = 0$$

$$\sum M = 9.6 \text{ TON} (1.5 \text{ m}) + B_y (3 \text{ m}) - 0.72 \text{ TON} (3.666 \text{ m}) - 1.35 \text{ TON} (5) = 0$$

$$\sum M = 14.4 \text{ TON} \cdot \text{m} + 3B_y - 2.6352 \text{ TON} \cdot \text{m} - 6.75 \text{ TON} \cdot \text{m} = 0$$

$$\sum M = 3B_y - 23.7852 \text{ TON} \cdot \text{m} = 0$$

$$\sum M = 3B_y = 23.7852 \text{ TON} \cdot \text{m}$$

$$B_y = 7.9284 \text{ TON}$$

$$B_y = \boxed{7.9284 \text{ TON}}$$

$$A_y - 11.67 \text{ TON} + 7.9284 \text{ TON} = 0$$

$$A_y - 3.7416 = 0$$

$$A_y = \boxed{3.7416 \text{ TON}}$$