



LUIS EDUARDO GUILLÉN MELGAR
UDS CAMPUS COMITÁN

3° A.
ESTÁTICA PARA LA
ARQUITECTURA.
PEDRO GARCÍA.
EUILIBRIO DE UN CUERPO
RÍGIDO.

Carga compuesta triangular-rectangular.

$$P = W \cdot L$$

$$P = (-3.20 \cdot 3) = \underline{9.6 \text{ ton}}$$

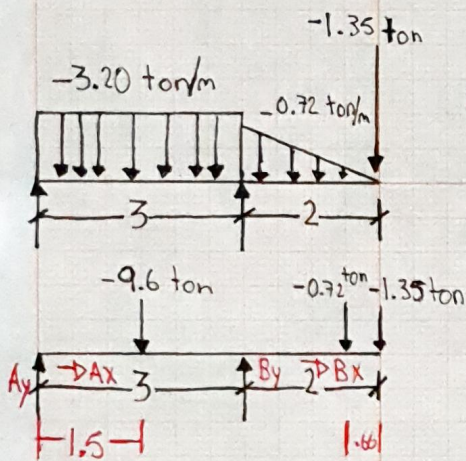
$$U_P = L/2 = 3/2 = \underline{1.5 \text{ m}}$$

$$P = (W \cdot L)/2$$

$$P = \frac{(-0.72 \cdot 2)}{2} = \underline{0.72 \text{ ton}}$$

$$A) U_P = 2/3 \cdot 2 = \underline{1.33 \text{ m}}$$

$$B) U_P = 1/3 \cdot 2 = \underline{0.66 \text{ m}}$$



$$\Sigma F_X = 0 \rightarrow A_X + B_X = 0$$

$$\Sigma M_A = 0 \rightarrow -(9.6 \cdot 1.5) + (B_y \cdot 3) - (0.72 \cdot 4.33) - (1.35 \cdot 0.66) =$$

$$-14.4 + B_y \cdot 3 - 3.11 - 0.89 = 0$$

$$-18.4 + B_y \cdot 3 = 0$$

$$B_y \cdot 3 = 18.4$$

$$B_y = \frac{18.4}{3} = \underline{6.13 \text{ ton}}$$

$$\Sigma F_Y = +A_y - 9.6 + 6.13 - 0.72 - 1.35 = 0$$

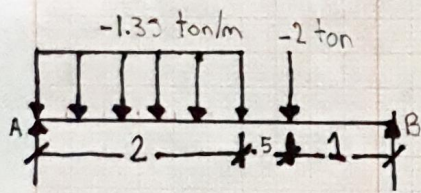
$$+A_y - 11.67 + 6.13 = 0$$

$$A_y - 5.54 = 0$$

$$A_y = \underline{5.54 \text{ ton}}$$

Comprobación:

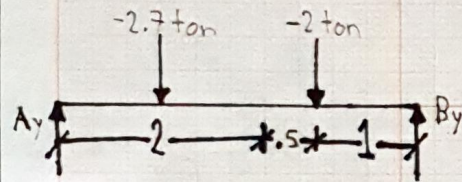
$$5.54 - 9.6 + 6.13 - 0.72 - 1.35 = \underline{0}$$



$$P = W \cdot L$$

$$P = (-1.3 \text{ ton/m} \cdot 2 \text{ m}) = \underline{-2.7 \text{ ton}}$$

$$U_p = L/2 = 2/2 = \underline{1}$$



—1—

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

$$\sum M_A = 0 \rightarrow -(2.7 \cdot 1) - (2 \cdot 2.5) + (B_y \cdot 3.5) = 0$$

$$-2.7 - 5 + B_y \cdot 3.5 = 0$$

$$-7.7 + B_y \cdot 3.5 = 0$$

$$B_y \cdot 3.5 = 7.7$$

$$B_y = \frac{7.7}{3.5} = \underline{2.2 \text{ ton}}$$

$$\sum F_y = 0 \rightarrow +A_y - 2.7 - 2 + 2.2 = 0$$

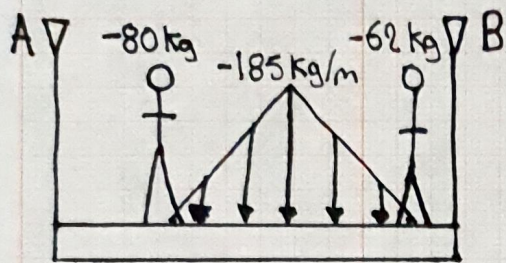
$$+A_y - 4.7 + 2.2 = 0$$

$$A_y - 2.5 = 0$$

$$A_y = \underline{2.5 \text{ ton}}$$

Comprobación:

$$2.5 - 2.7 - 2 + 2.2 = \underline{0}$$

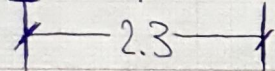
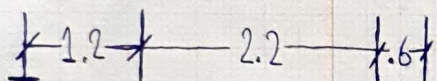
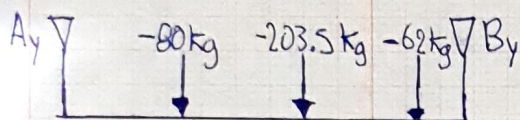
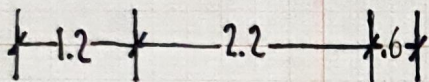


$$P_x = (W \cdot L / 2)$$

$$P_x = (-185 \cdot 2.2) = \underline{-203.5 \text{ Kg}} //$$

$$U_p = L / 2$$

$$U_p = 2.2 / 2 = \underline{1.1} //$$



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

$$\sum M_A = 0 \rightarrow -80(1.2) - 203.5(2.3) - 62(3.4) + B_y(4)$$

$$-96 - 468.05 - 210.8 + B_y \cdot 4 = 0$$

$$-774.85 + B_y \cdot 4 = 0$$

$$B_y = \frac{774.85}{4} = \underline{193.7125 \text{ Kg}} //$$

$$\sum F_y = 0 \rightarrow A_y - 80 - 203.5 - 62 + 193.7125 = 0$$

$$A_y - 345.5 + 193.7125 = 0$$

$$A_y - 151.7875 = 0$$

$$A_y = \underline{151.7875 \text{ Kg}} //$$

Comprobación:

$$151.7875 - 80 - 203.5 - 62 + 193.7125 = 0 //$$