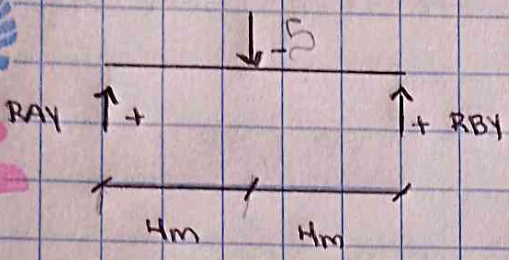
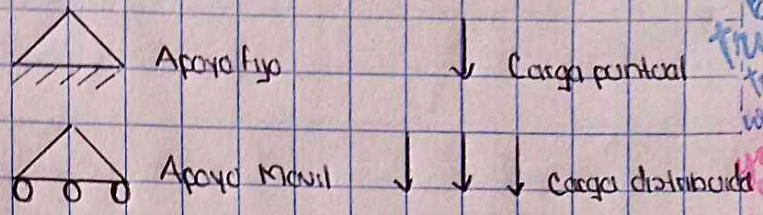
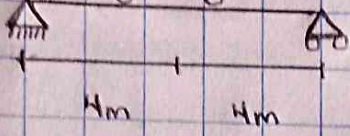


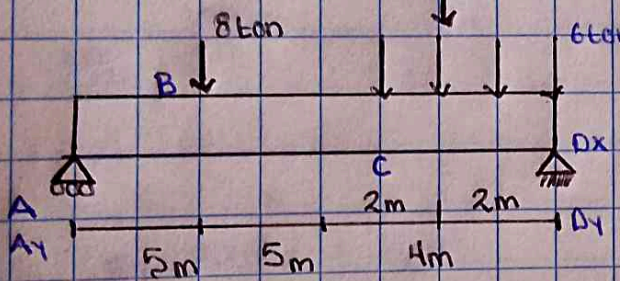
$$\begin{cases} \sum M = 0 \\ \sum T_x = 0 \\ \sum T_y = 0 \end{cases} \text{ESTÁTICA}$$



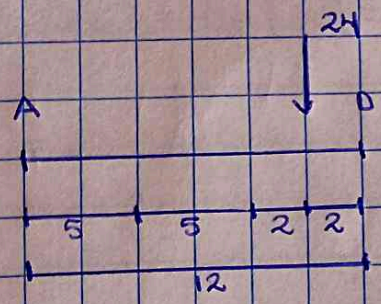
$$\begin{aligned} T_x &= 0 \\ \sum M_A &= 0 \\ \sum M_A &= 5 \text{ ton} (4\text{m}) + R_{By} (8\text{m}) = 0 \\ -20 \text{ ton/m} + R_{By} (8) &= 0 \\ R_{By} &= \frac{20 \text{ ton/m}}{8\text{m}} = 2.5 \text{ ton} \end{aligned}$$

$$\begin{aligned} \sum T_y &= 0 \\ R_{Ay} - 5 \text{ ton} + 2.5 \text{ ton} &= 0 \\ R_{Ay} - 2.5 \text{ ton} &= 0 \\ R_{Ay} &= 2.5 \text{ ton} \end{aligned}$$

Tuerza resultante 24 ton/m



- $\sum F_x = 0$
 $-D_x$
- Calcular carga distribuida
 $4 \times 6 \text{ ton/m} = 24 \text{ ton/m}$



$$\begin{aligned} \sum M &= 0 \\ \sum M_A &= 0 \\ D_y &= (14\text{m}) - 24 \text{ ton} (12\text{m}) - 8 \text{ ton} (5\text{m}) = 0 \\ D_y &= (14\text{m}) - 288 \text{ ton}\cdot\text{m} - 40 \text{ ton}\cdot\text{m} = 0 \\ D_y &= -328 \text{ ton}\cdot\text{m} = 0 \\ D_y &= (14\text{m}) = 328 \text{ ton} \\ D_y &= 328 \text{ ton} / 14\text{m} = 23.429 \text{ ton} \end{aligned}$$

$$\sum F_y = 0$$

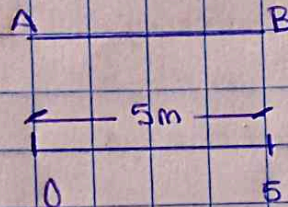
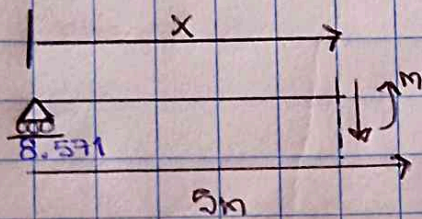
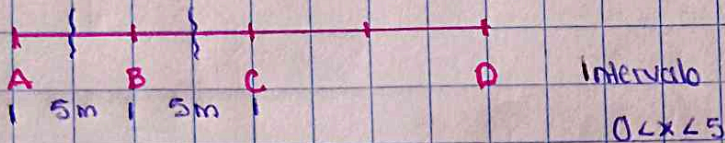
$$A_y = 8 \text{ ton} - 24 \text{ ton} + 23.429 \text{ ton} = 0$$

$$A_y = 8.571$$

$$A_y = 8.571$$

Comprobación $\rightarrow +0y - 8 \text{ ton} - 24 \text{ ton} + A_y$

$EI = CAe \rightarrow$ Ecuación de Momento (cortes en una viga)

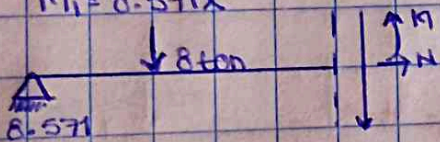


↓ = cortante
 → Fuerza normal
 ↷ = Momento

$$M_1 =$$

$$8.571x$$

$$M_1 = 8.571x$$

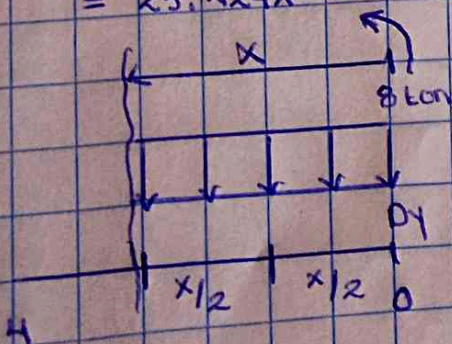


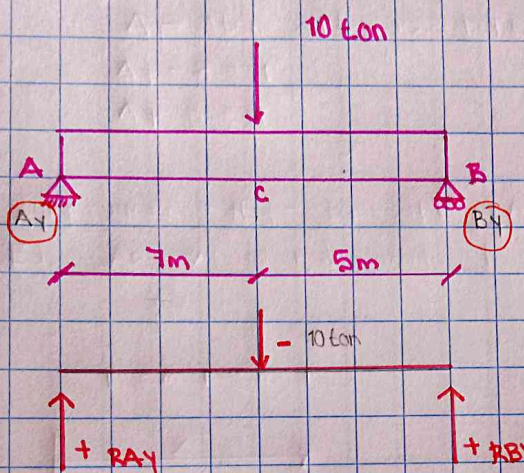
$$M_2 = 8.571x - 8(x-5)$$

$$6x(x/2) = 6x\left(\frac{x}{2}\right) = \frac{6x^2}{2}$$

$$M_3 = 23.429x - 6x(x/2)$$

$$= 23.429x - 3x^2$$





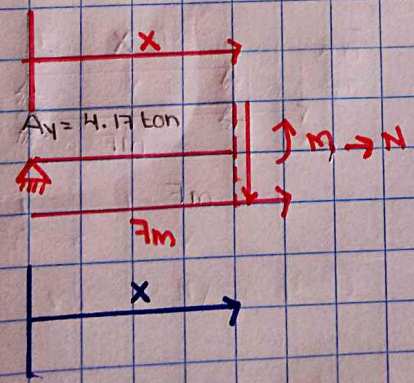
$$\begin{aligned} \textcircled{1} \sum M &= 0 \\ \sum F_x &= 0 \\ \sum F_y &= 0 \end{aligned}$$

$$\begin{aligned} \sum M_A &= 0 \\ \sum M_A &= -10 \text{ ton} (7 \text{ m}) + B_y (12 \text{ m}) = 0 \\ -70 \text{ ton/m} + B_y (12 \text{ m}) &= 0 \\ B_y &= \frac{70 \text{ ton/m}}{12 \text{ m}} = 5.83 \text{ ton} \end{aligned}$$

$$\begin{aligned} \sum F_y &= 0 \\ A_y - 10 \text{ ton} + 5.83 \text{ ton} &= 0 \\ A_y - 4.17 &= 0 \\ A_y &= 4.17 \text{ ton} \end{aligned}$$

Comprobación = $4.17 - 10 \text{ ton} + 5.83 \text{ ton}$

$EI = CAe \rightarrow$ Ecuación Momento



$$M_x = 4.17x$$

Be true to who you are

paradise.