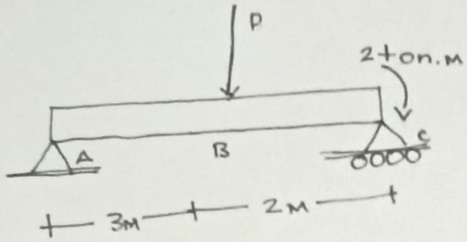


DETERMINAR LA DEFLEXION EN EL PUNTO P

APLICAR LA CARGA "P"

$\Sigma M_O = 0$

$C_y(5m) - 2ton \cdot m + P(3m) = 0$

$C_y = 2ton \cdot m / 5m - P(3m/5m)$

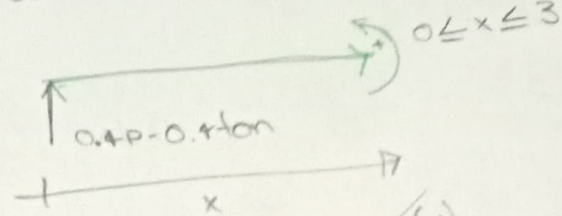
$C_y = 0.4 ton - 0.6P$

$A_y - P + C_y = 0$

$A_y = P - (0.4 ton - 0.6P)$

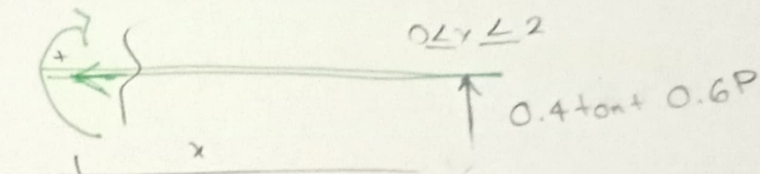
$A_y = 0.4P - 0.4 ton$

CORTE ①



$M_1 = 0.4P(x) - \cancel{0.4ton(x)}$

CORTE ②



$M_2 = 0.4\cancel{ton}(x) + 0.6P(x) - 2$

$\frac{\partial M}{\partial P} = 0.4x$

$\frac{\partial M}{\partial P} = 0.6x$

FORMULA

$\Delta = \int_0^L \frac{(m)\left(\frac{\partial M}{\partial P}\right)}{EI} dx = \quad \Delta = \int_0^3 \frac{(-0.4x)(0.4x)\,dx}{EI} \int_0^2 \frac{(0.4x-2)(0.6x)\,dx}{EI}$

$\Delta = \int_0^3 \frac{(-0.16x^2)\,dx}{EI} \int^3 \frac{-0.16x^{2+1}}{2+1} = \frac{-0.16x^3}{3} \rightarrow$

$\frac{-0.053x^3}{1} \rightarrow \int_0^3 \frac{0.053x^3}{EI}$

$= \frac{0.053(3)^3}{EI} + \cancel{\frac{0.053(0)^3}{EI}}$

$= \frac{0.053(27)}{EI} = \frac{1.431}{EI}$

$$\int_0^2 \frac{(0.4x-2)(0.6x)}{EI} = \frac{1}{EI}\int_0^2 0.24x^2 - 1.2x\,dx \to \Big|_0^2 \frac{0.24x^{2+1}}{2+1=3} - \frac{1.2x^{1+1}}{2}$$

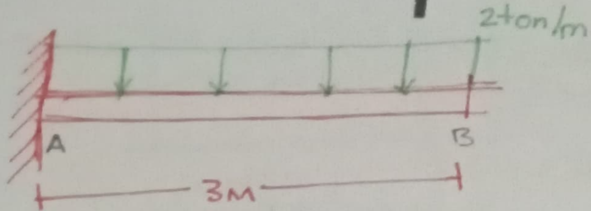
$$\Big|_0^2 \frac{0.08x^3}{1} \quad \Big|_0^2 \frac{0.6x^2}{1} \to \frac{0.08x^3}{EI} - \frac{0.6x^2}{EI} =$$

$$\frac{0.08(2)^3}{EI} - \cancel{\frac{0.08(0)^2}{EI}} - \frac{0.6(2)^2}{EI} - \cancel{\frac{0.6(0)^2}{EI}} =$$

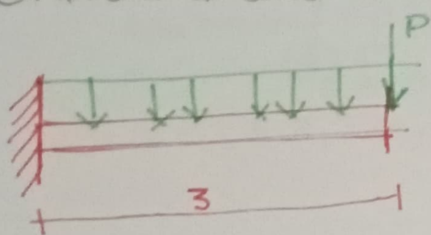
$$\frac{0.08(8)}{EI} - \frac{0.6(4)}{EI} = \frac{0.64}{EI} - \frac{2.4}{EI} = -\frac{1.76}{EI}$$

$$-\frac{1.431}{EI} + \left(-\frac{1.76}{EI}\right) = \frac{-3.191}{EI} \uparrow +$$

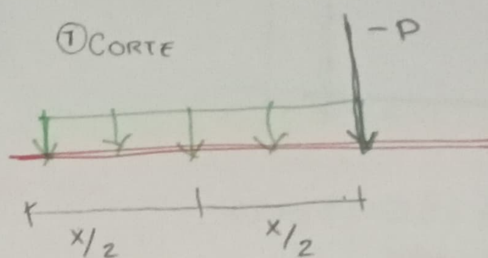
ESTRUCTURAS



① APLICAR LA CARGA "P"



① CORTE



$M = -P(x) - 2(x/2)$

$-P(x) - x^2$

↳ CONSTANTE

$\frac{\partial M}{\partial P} = -X$

CON

$A \cdot 0 = \int_0^L \frac{(M)\left(\frac{\partial M}{\partial P}\right) dx}{EI}$

$\Delta = \int_0^3 \frac{(-x^2)(-x)\,dx}{EI} = \frac{1}{EI}\int_0^c -x^3\,dx = \frac{1}{EI}\int_0^c \frac{x^4}{4} = \frac{0.25x^4}{1} = \frac{0.25(81)}{EI}$ $/\frac{81}{4}$ 20.25