ARQ. JOSE LISANDRO LOPEZ ALFARO

NOMBRE DEL TEMA: CENTROIDES MOMENTOS DE INERCIA

PARCIAL: 3

NOMBRE DE LA MATERIA: RESISTENCIA DE MATERIALES

ARQ. PEDRO ALBERTO GARCIA LOPEZ

NOMBRE DE LA LICENCIATURA: ARQUITECTURA

CUATRIMESTRE: IIII

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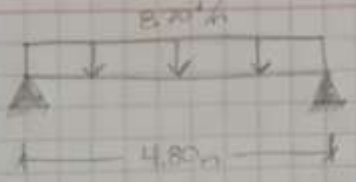


① $qL \rightarrow 8.70\ (4.80_m) = 41.76$ ton

② $R_A = R_B \rightarrow qL/2 = 8.70\ t/m \cdot 4.80_m / 2 = 20.88$

③ $\Sigma F_y = 0 \quad 20.88 - [8.70\ t/m\ (x)] - V = 0$

$V = 20.88\ ton - [8.70\ t/m\ (x)]$

④ $20.88 \cdot (x) [8.70\ ton\ (x)\ (x/2)] + M = 0$

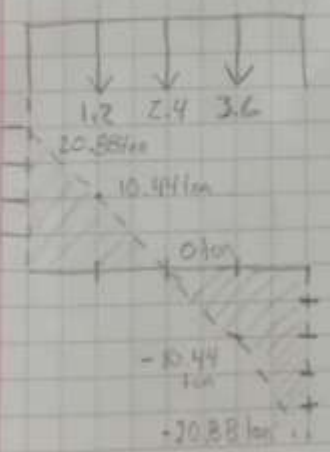
$M = -20.88 \cdot \dfrac{x - 8.70\ t/m\ (x^2)}{2}$

$M = -20.88\ ton \cdot (x) - 4.35\ x^2 + M = 0$

$M = 20.88\ ton\ (x) - 4.35\ t/m\ (x^2)$

$V = 20.88\ ton - [8.70\ t/m\ (x)]$

$M = 20.88\ ton\ (x) - 4.35\ t/m\ (x^2)$



x	1.2	2.4	3.6	4.8
V				

$V = 20.88\ ton - [8.75\ t/m\ (0)] = 20.88$ ton

$V = 20.88$ ton $- [8.75\ t/m\ (1.2)] = 10.44$ ton

$V = 20.88$ ton $- [8.75\ t/m\ (2.4)] = 0$

$V = 20.88$ ton $- [8.75\ t/m\ (3.6)] = -20.88$ ton

$V = 10.88$ ton $- [8.75\ t/m\ (4.8)] = -10.44$ ton

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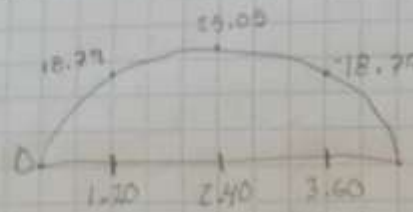
$M = 20.88 \text{ ton}(0) - 4.35 \text{ t/m}(0^2) = 0$

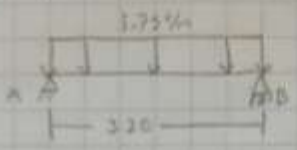
$M = 20.88 \text{ ton}(1.20) - 4.35 \text{ t/m}(1.20^2) = 18.79$

$M = 20.88 \text{ ton}(2.40) - 4.35 \text{ t/m}(2.40^2) = 25.05$

$M = 20.88 \text{ ton}(3.60) - 4.35 \text{ t/m}(3.60^2) = 18.79$

$M = 20.88 \text{ ton}(4.80) - 4.35 \text{ t/m}(4.80^2) = 0$





① $qL = (3.75 \text{ t/m})(3.20\text{m}) = 12 \text{ ton}$

② $R_A = R_B = \frac{qL}{2} \quad \frac{(3.75 \text{ t/m})(3.20)}{2} = 6 \text{ ton}$

③ $\Sigma FY = 0 \quad 6 \text{ ton} - [3.75 \text{ t/m}(x)] - V = 0$

$V = 6 \text{ ton} - [3.75 \text{ t/m}(x)]$

④ $6 \text{ ton} \cdot (x) [3.75 \text{ t/m}(x)(x/2)\text{m}] = 0$

$M = -6 \text{ ton} \cdot x - \frac{3.75 \text{ t/m}(x^2)}{2}$

$M = -6 \text{ ton} \cdot (x) - 1.87 x^2 + M = 0$

$M = 6 \text{ ton}(x) - 1.87 \text{ t/m}(x^2)$

$V = 6 \text{ ton} - [3.75 \text{ t/m}(x)]$

$M = 6 \text{ ton}(x) - 1.87 \text{ t/m}(x^2)$

(5)

x	0.8	1.6	2.4	3.2
V				

$V = 6\ ton - [3.75\ t/m\ (0)] = 6$

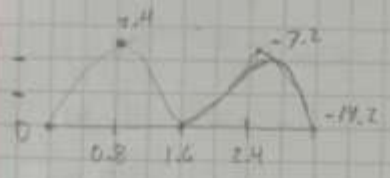
$V = 6\ ton - [3.75\ t/m\ (0.8)] = 3$

$V = 6\ ton - [3.75\ t/m\ (1.6)] = 0$

$V = 6\ ton - [3.75\ t/m\ (2.4)] = -3$

$V = 6\ ton - [3.75\ t/m\ (3.2)] = -6$

(6)



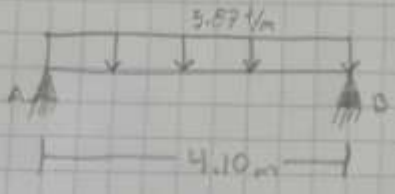
$M = 6\ ton\ (0) - 3.75\ t/m\ (0^2) = 0$

$M = 6\ ton\ (0.8) - 3.75\ t/m\ (0.8^2) = 2.4$

$M = 6\ ton\ (1.6) - 3.75\ t/m\ (1.6^2) = 0$

$M = 6\ ton\ (2.4) - 3.75\ t/m\ (2.4^2) = -7.2$

$M = 6\ ton\ (3.2) - 3.75\ t/m\ (3.20) = -19.2$



① $qL = (5.87\ t/m)(4.10\ m) = 24.06\ ton$

② $qL/2 = (5.87)(4.10)/2 = 12.03\ ton$

③ $\Sigma F_Y = 0 \quad 12.03\ ton - [5.87\ t/m\ (x)] - V = 0$

$V = 12.03\ ton - [5.87\ t/m\ (x)]$

④ $12.03 \cdot (x) - [5.87\ t/m\ (x)\ (x/2)\ m] = 0$

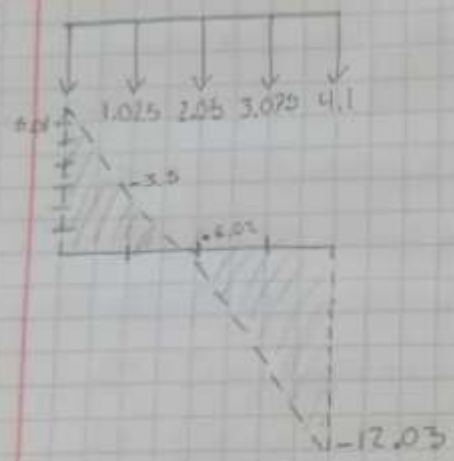
$M = -12.03 \cdot x - \dfrac{5.87\ t/m\ (x^2)}{2}$

$M = -12.03 \cdot (x) - 2.93\ x^2 + M = 0$

$M = 12.03\ (x) - 2.93\ t/m\ (x^2)$

$V = 12.03\ ton - [5.87\ t/m\ (x)]$

$M = 12.03\ ton\ (x) - 2.93\ t/m\ (x^2)$



$V = 12.03\,ton - [5.87\,t/m\,(0)] = 12.03$

$V = 12.03\,ton - [5.87\,t/m\,(1.025)] = 6.01$

$V = 12.03\,ton - [5.87\,t/m\,(2.05)] = -3.5$

$V = 12.03\,ton - [5.87\,t/m\,(3.075)] = -6.02$

$V = 12.03\,ton - [5.87\,t/m\,(4.1)] = -12.03$

$M = 12.03\,ton\,(0) - 5.87\,t/m\,(0^2) = 0$

$M = 12.03\,ton\,(1.025) - 5.87\,t/m\,(1.025^2) = 6.16$

$M = 12.03\,ton\,(2.05) - 5.87\,t/m\,(2.05^2) = -7.1$

$M = 12.03\,ton\,(3.075) - 5.87\,t/m\,(3.075^2) = -18.51$

$M = 12.03\,ton\,(4.1) - 5.87\,t/m\,(4.1^2) = -49.35$