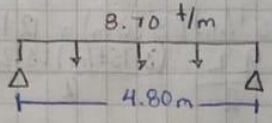
EJERCICIO 01

1.



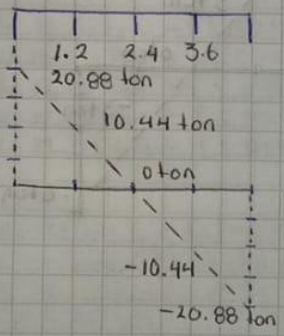
① $9L \rightarrow 8.70\ (4.80\,m) = 41.76$ ton

② $RA = RB \rightarrow 9L/2 = 8.70\ t/m \cdot 4.80\,m/2$
$= 20.88$

③ $\sum FY = 0 \quad 20.88 - [8.70\ t/m\ (x)] - V = 0$
$V = 20.88\ ton - [8.70\ t/m\ (x)]$

④ $20.88 \cdot (x)\ [8.70\ ton\ (x)\ (x/2)]\ t/m = 0$
$M = -20.88 \cdot x - \dfrac{8.70\ t/m\ (x^2)}{2}$

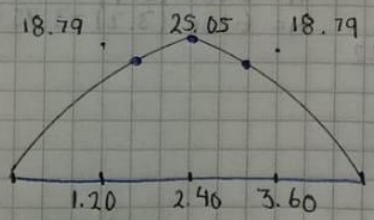
$M = -20.88\ ton \cdot (x) - 4.35\ x^2\ t/m = 0$
$M = 20.88\ ton\ (x) - 4.35\ t/m\ (x^2)$
$V = 20.88\ ton - [8.70\ t/m\ (x)]$
$M = 20.88\ ton\ (x) - 4.35\ t/m\ (x^2)$



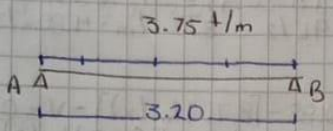
X	1.2	2.4	3.6	4.8
Y				

$V = 20.88\ ton - [8.75\ t/m\ (0)] = 20.88$ ton
$V = 20.88\ ton - [8.75\ t/m\ (1.2)] = 10.44$ ton
$V = 20.88\ ton - [8.75\ t/m\ (2.4)] = 0$
$V = 20.88\ ton - [8.75\ t/m\ (3.6)] = -20.88$ t
$V = 20.88\ ton - [8.75\ t/m\ (4.8)] = -10.44$ t

⑤ $M = 20.88\ ton\ (0) - 4.35\ t/m\ (0^2) = 0$
$20.88\ ton\ (1.20) - 4.35\ t/m\ (1.20^2) = 18.79$
$20.88\ ton\ (2.40) - 4.35\ t/m\ (2.40^2) = 25.05$
$20.88\ ton\ (3.60) - 4.35\ t/m\ (3.60^2) = 18.79$
$20.88\ ton\ (4.80) - 4.35\ t/m\ (4.80^2) = 0$



EJERCICIO 02



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

② $RA = RB = \frac{qL}{2} \quad \frac{(3.75\ t/m)(3.20)}{2} = 6t$

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

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

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

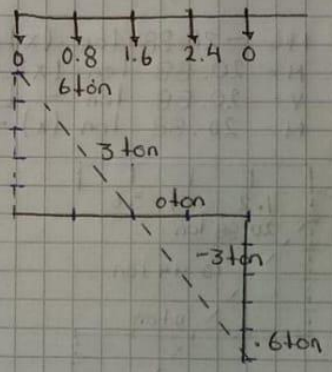
$M = -6\ ton \cdot x - \frac{3.75\ t/m\ (x^2)}{2}$

$M = -6\ ton \cdot (x) - 1.87\ x^2\ t/m = 0$

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

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

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



⑥

X	0.8	1.6	2.4	3.2
V				

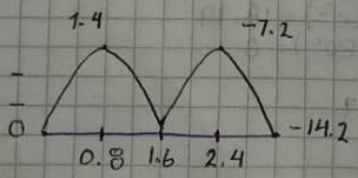
$V = 6\ ton - [3.75\ ton/m\ (0)] = 6$

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

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

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

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



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

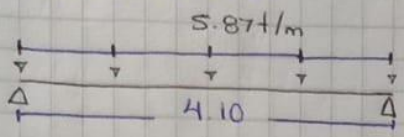
$M = 6\ ton(0.8) - 3.75\ t/m\ (0.8^2) = 2.4$

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

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

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

EJERCICIO 03



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

② $qL = (5.87\ t)(4.10)/10 = 12.03\ ton$

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 $12.03 \cdot (x) \left[5.87\ t/m\ (x)\left(\frac{x}{2}\right) t_m\right] = 0$

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

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

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

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

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

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

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

$V = 12.03\ ton - [5.87\ t/m\ (2.05)] = -3.3$

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

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

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

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

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

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

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