# Ejercicios

*Nombre del Alumno: Pablo Daniel Castro Herrera*

*Nombre del tema:* ***Reacciones en elementos combinados***

*Parcial: III*

*Nombre de la Materia: Estatica para la arquitectura*

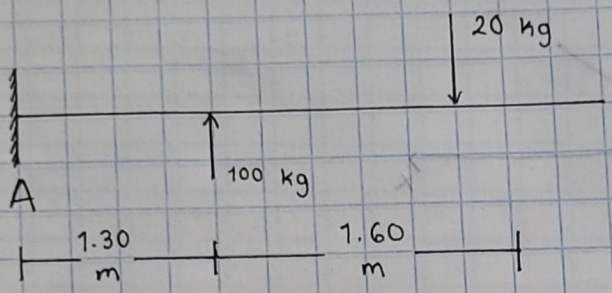
*Nombre del profesor: Arq. Pedro García*

*Nombre de la Licenciatura: Arquitectura*

*Cuatrimestre: 3*

*Fecha: 5 de julio 2023*

①

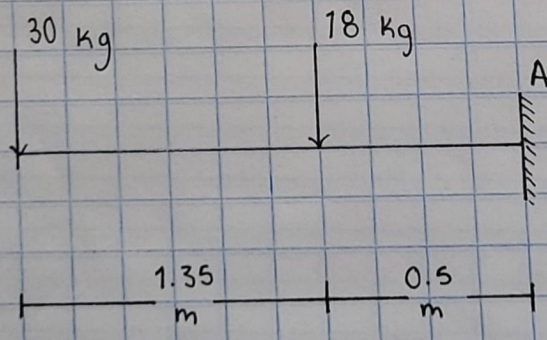



$Ma = (100\ kg \cdot 1.30\ m) - (20\ kg \cdot 2.90\ m) = 0$

$Ma = (130\ kg \cdot m - 58\ kg\,m) = 0$

$Ma = 72\ kg\,m$

②

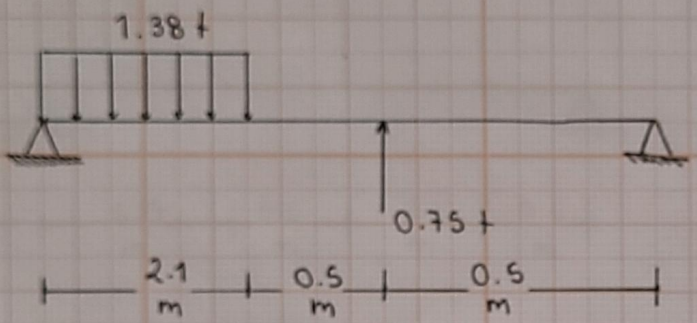



$Ma = (18\ kg \cdot 0.5\ m) + (30\ kg \cdot 1.85\ m) = 0$

$Ma = (9\ kg\,m + 55.5\ kg\,m) = 0$

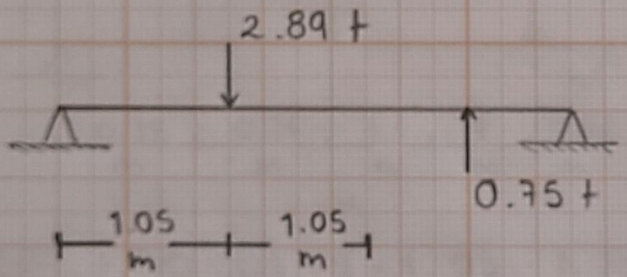
$Ma = 64.5\ kg\,m$

2




$P = \omega \cdot L$

$UP = \frac{L}{2}$

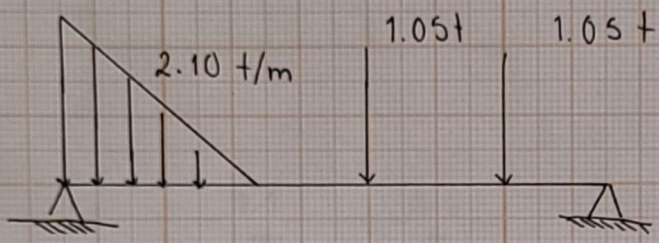


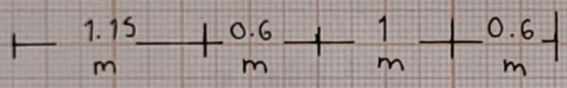

$Ma = (-2.89\ t \cdot 1.05\ m) + (-0.75\ t \cdot 2.6\ m)$

$Ma = 3.042\ t\,m - 1.95\ t\,m$

$Ma = 1.092\ t \cdot m$

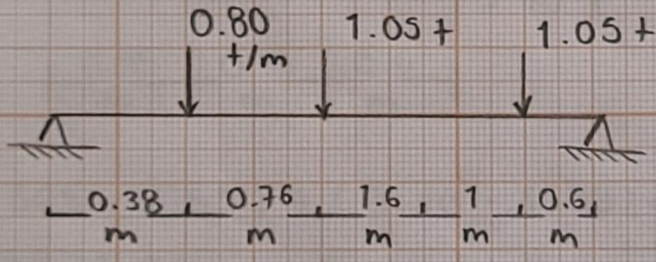
2




$$P = \frac{2.10 \cdot 1.15}{2}$$

U = 0.80
UP = 0.38

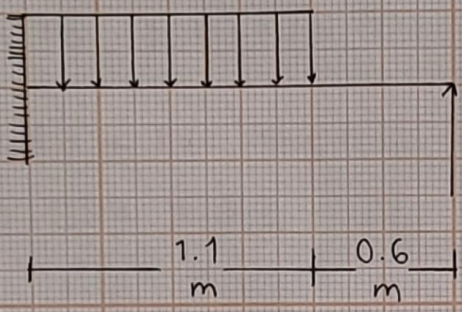


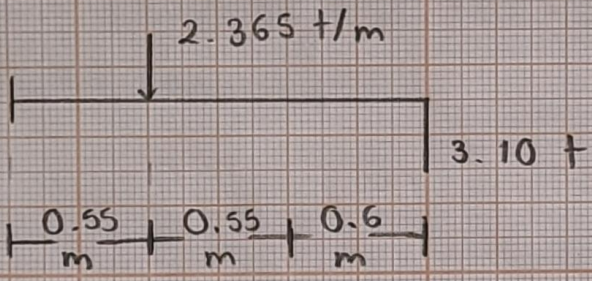

$Ma - (1.207 + .0.38) + (-1.05 \cdot 1.75) + (-1.05 \cdot 2.75)$

$Ma - 0.462 - 1.837 + 2.887$

$Ma = -5.186 \ t \cdot m$

3

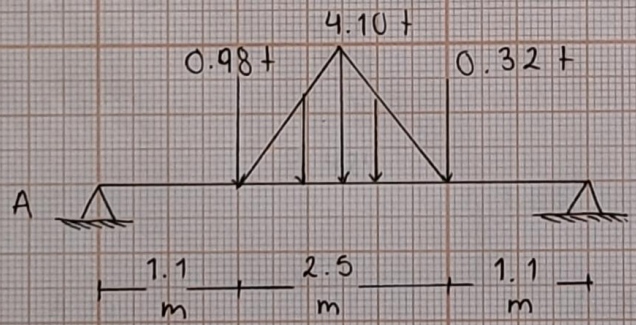


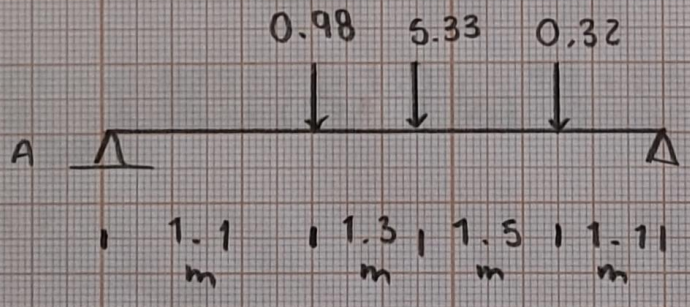




$Ma = (-2.365 \cdot 0.55) + (3.10 \cdot 1.70) = 0$

$Ma = -1.30075\ T/m + 5.27\ t = 0$

$Ma = 3.96925\ T \cdot m$



$Ma = (-0.98 \cdot 1.1) + (-5.33 \cdot 2.4) + (-0.32 \cdot 3.7) + (RB \cdot 4.8)$

$Ma = -1.078 - 12.792 - 1.184 + (RB \cdot 4.8)$

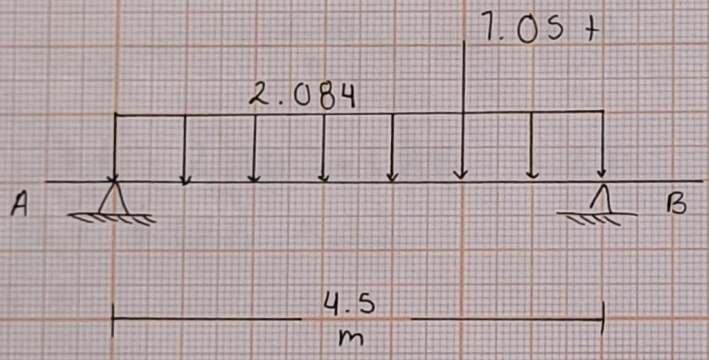
$Ma = -15.054 + RB \cdot 4.8$

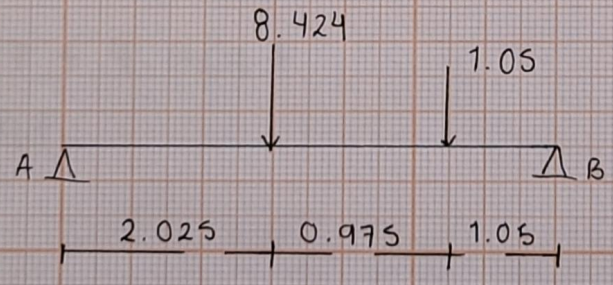
$RB = 3.13\ t$

$Ra = 0.98 - 5.33 - 0.32 + 3.13 = -3.49$

$Ra = 3.49\ ton$

4-5




$Ma = (-8.424 \cdot 2.025) + (-1.05 \cdot 3) + (RB \cdot 4.05) = 0$

$Ma = -17.05 - 3.15 + (RB \cdot 4.05) = 0$

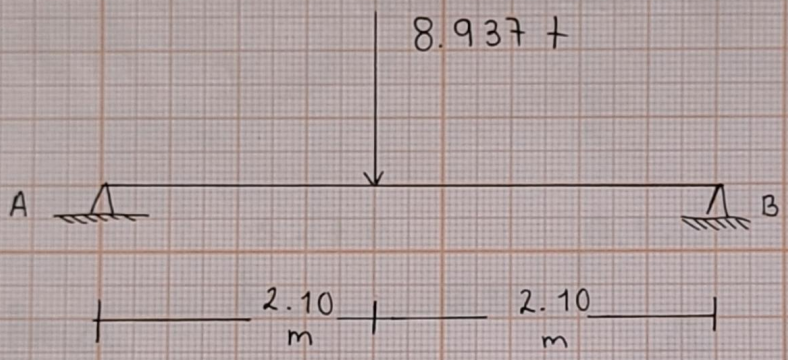
$Ma = -20.208$

$RB = 4.989\ t$

$Ra = -8.424 - 1.05 + 4.489 = 0$

$Ra = -4.485 = 0$

$Ra = 4.485\ t.$




$Ma = (-8.937\ t \cdot 2.10) + (RB \cdot 4.2)$

$Ma = -18.767 + (RB \cdot 4.2)$

$RB = 4.468\ t$

$Ra = -8.937 + 4.468\ t$

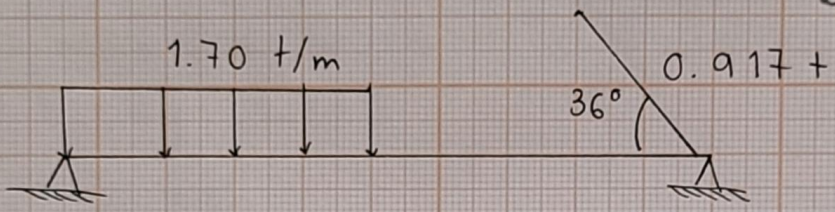
$Ra = 4.469\ t$

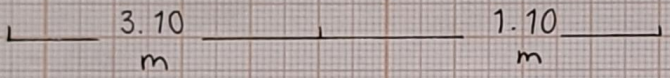
6

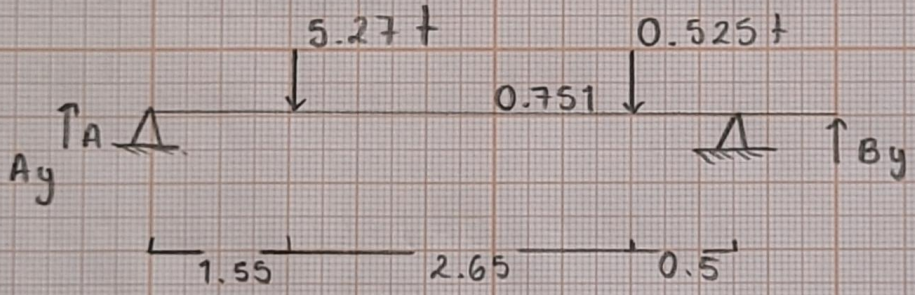
$B_x = 0.751\ t$

$A_y = 3.587\ t$

$B_y = 2.208\ t$




1 = P = (1.70 t/m)(3.10 m)

P = 5.27 t

UP = 1.55 m

2 CO = Sen 35° (0.917 t) = 0.525 t

Ca = Cos 35° (0.917 t) = 0.751 t

$\Sigma F_y = 0$

$0.751\ t - B_x = 0$

$B_x = 0.751\ t$

$\Sigma F_y = 0$

$A_y = -5.27\ t - 0.525\ t + B_y = 0$

$A_y = -5.795\ t + B_y = 0$

$A_y + B_y = 5.795\ t$

$\Sigma mB = 0$

$-0.525\,t\,(0.5m) - 5.27\,t\,(3.15m) + Ay\,(4.7m) = 0$

$-0.2625 - 16.6005 + Ay \cdot 4.7 = 0$

$-16.836\,t + Ay \cdot 4.7 = 0$

$Ay = 3.587\,t$

$By = 5.795\,t - Ay$

$By = 5.795\,t - 3.587\,t$

$By = 2.208\,t$