# Ensayo

*Nombre del Alumno: Aguilar López Jorge Alberto*

*Nombre del tema: Momentos*

*Parcial: 2*

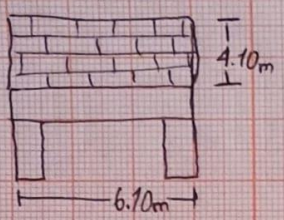
*Nombre de la Materia: Resistencia de materiales de construcción*

*Nombre del profesor: Pedro Alberto García López*

*Nombre de la Licenciatura: Arquitectura*

*Cuatrimestre: 4*

Problema 1



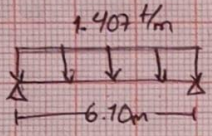

$h = \frac{6.10m}{12} = 0.50m$

$b = 0.5(0.50)m = 0.25m$

P.P trabe = $0.50 \times 0.25 \times 2400 kg/m = 300 kg/m$

P.P. Muro = $4.10m \times 2.70 kg/m = 1,107 kg/m$

$1,107 kg/m + 300 kg/m = 1407 kg/m = 1.407 ton/m$




$m = \frac{1.407 t/m (6.10m)}{8} = 6.544 ton \cdot m$

$RA = RB = \frac{1.407 t/m (6.10)}{2} = 4.291 ton$

$I_x = \frac{0.25(0.50)^3}{12}$

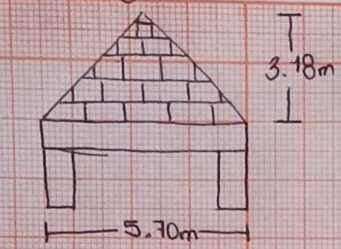
$I_x = 0.002604 m^4$

$\theta_A y \theta_B = \frac{1.407 ton/m (6.10)^3}{24 (3100000 t/m^2)(0.002604 m^4)} = 0.0001648$

$F = \frac{5}{384} \cdot \frac{1.407 t/m (6.10)^4}{3100000 t/m^2 \cdot 0.002604 m^4} = 0.003142 m = 3.14 mm$

$\Delta = \frac{610m}{240} = 2.54 cm$

Problema 02

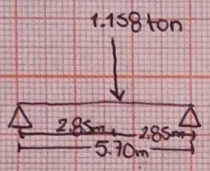



$h = \frac{5.70m}{12} = 0.47m = \underline{0.50m}$

$b = 0.5(0.50m) = \underline{0.25m}$

P.P trabe $= 0.50 \times 0.25 \times 2400\ kg/m^3 = \underline{300\ kg/m^3}$

P.P muro $= 3.18m(270\ kg/m^3) = \underline{858.6\ kg/m^3}$




$858.6\ kg/m^3$
$+\ 300\ kg/m^3$
$1.158\ kg/m^2 = \underline{1.158\ ton}$

$m = \frac{1.158\ ton(5.70)^2}{12} = \underline{3.135\ ton/m}$

$RA = RB = \frac{1.158\ ton(5.70)^2}{4} = \underline{1.650\ ton}$

$I_x = \frac{b \cdot h^3}{12} \rightarrow \frac{0.25(0.50)^3}{12}$

$I_x = 0.002604\ m^4$

$\theta_A \text{ y } \theta_B = \frac{5(1.158\ ton)(5.70m)^3}{196(3100000\ t/m^2)0.002604\ m^4} = \underline{0.00067771}$

$F = \frac{1.158(5.70)^4}{120(3100000)0.002604\ m^4} = 0.000006813m = \underline{6.81mm}$

$\Delta = \frac{L}{240} = \frac{570cm}{240} = \underline{2.375\ cm}$