Nombre del Alumno José Amílcar Trejo hidalgo

Nombre del tema: ejercicios

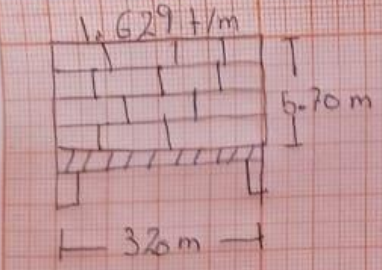
Parcial 2

Nombre de la materia: resistencia de materiales

Nombre del profesor :pedro Alberto

Nombre de la Licenciatura arquitectura

Cuatrimestre 4to

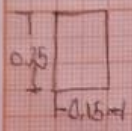


Concreto reforzado
muro de Block = 270 kg/m

$h = \frac{L}{12} \rightarrow \frac{3.20m}{12} = 0.2666\ m$

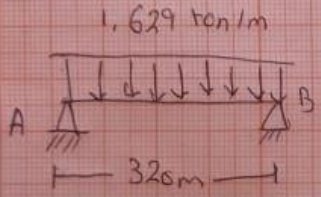
$b = 0.5(h) \rightarrow 0.5(0.25) = 0.125\ m$

P.P. trabe = $0.25m \times 0.15 \times 2,400 kg/cm^2 =$
90 kg/m



P. P muro = $5.70 m (270 kg/m) = 1,539 kg/m$

1,539 kg/m
90 kg/m
1,629 kg/m → 1.629 ton/m



$m = \frac{1}{8} q L^2 \rightarrow \frac{1.629\ ton/m\ (3.20m)^2}{8} = 2.085\ ton.m$

$RA = RB = \frac{q \cdot L}{2} \rightarrow \frac{1.629\ ton/m\ (3.20m)}{2} = 2.606\ ton$

$E = 3,100,000\ ton/m^2$

$Ix = \frac{bh^3}{12} \rightarrow \frac{(0.15m)(0.25m)^3}{12} = 0.000\ 1953\ m^4$

$\theta A = \theta B = \frac{WL^3}{24EI} \rightarrow \frac{1.629(3.20m)^3}{24(3,100,000 ton/m^2)(0.000195 m^4)} = \frac{53.379072}{1,530.32} =$

0.003673

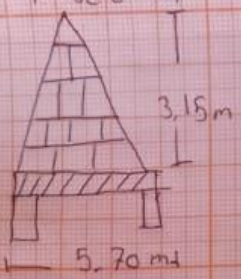
$f = \frac{5}{384} = \frac{WL^4}{EI} \rightarrow \frac{5}{384} \cdot \frac{1.629 ton/m (3.20)^4}{(3,100,000 ton/m^2)(0.000195 m^4)} = 0.003673 m$

36.73cm

A

$\Delta_{perm} = \frac{L}{240} \rightarrow \frac{320 cm}{240} = 1.33 cm$

1.1586 t/m



Concreto reforzado

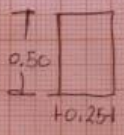
muro de Block = 270 kg/m

$h = \frac{L}{12} \rightarrow \frac{5.70\ m}{12} = 0.475m$

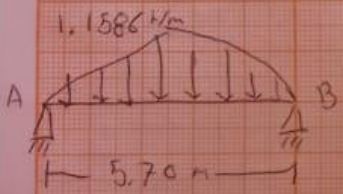
$b = 0.5(h) \rightarrow 0.5(0.50) = 0.25m$

P.P trabe = $0.50m \times 0.25m \times 2,400\ kg/m^3 = 300\ kg/m$

P.P muro = $3.18m(270\ kg/m) = 858.6\ kg/m$



858.6 kg/m
+ 800 kg/m
1,158.6 kg/m → 1.1586 ton/m



$M = \frac{qL^2}{12} \rightarrow \frac{1.1586\ ton/m\ (5.70)^2}{12} = 3.136\ ton.m$

$RA = RB = \frac{qL}{4} \rightarrow \frac{1.1586\ ton/m\ (5.70m)}{4} = 1.651\ ton$

$E = 3,100,000\ ton/m^2$

$I_x = \frac{bh^3}{12} \rightarrow \frac{0.25m(0.50)^3}{12} = 0.002604 m^4$

$\theta_A = \theta_B = \frac{5WL^3}{196 \cdot E.I} \rightarrow \frac{5(1.1586\ ton/m)(5.70)^3}{196(3,100\,000\ ton/m^2)(0.002604\ m^4)} = \frac{1022.823049}{1582190.4} =$

0.0006780

$\Delta = \frac{7WL^4}{120EI} \rightarrow \frac{1.1586\ ton/m(5.70m)^4}{120(3,100,000\ ton/m^2)(0.002604\ m^4)} = 0.00262m \rightarrow 12.62\ cm$

$\Delta_{PSI} = \frac{L}{240} \rightarrow \frac{5.70m}{240} = 2.375cm$