NOMBRE DEL ALUMNO: JULIO ALBERTO AGUILAR VERA

NOMBRE DEL PROFESOR: PEDRO ALBERTO GARCIA

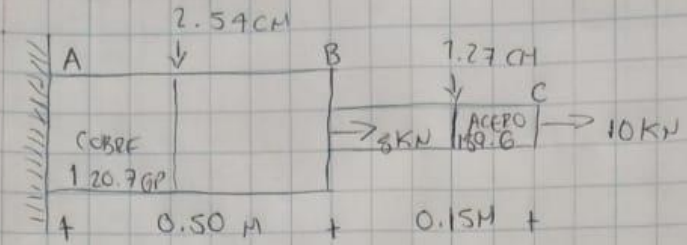
NOMBRE DEL TRABAJO: ESFUERZO Y DEFORMACION

MATERIA: RECISTENCIA DE MATERIALES

GRADO: 4TO CUATRIMESTRE

GRUPO: A

COMITAN DE DOMINGUEZ CHIAPAS A 26 DE NOVIEMBRE DE 2021



A B

P = 8 kN

A = 0.000507 m^2

LF = 0.50 M

E = 120.7 GPA → 1.207×10^{11}

$\delta = \frac{PLF}{AE}$

$\delta = \frac{8\ kN\ (0.50\ M)}{0.00057\ m^2\ (1.207 \times 10^{11})}$

$\delta = \frac{4\ kN.M}{61,199,900\ N.N/M}$

$\delta = 6.536\,497\,42 \times 10^{-08}\ M$

B C

P = 8kN + 10K = 18 KN

A = 1.267 M^2 = 0.000127 M^2

LF = 0.15M

E = 189.6 GPA = 1.896×10^{11} N/M

$\delta = \frac{PLF}{AE}$ $\quad \delta = \frac{18\ kN\ (0.15M)}{0.000127\ M^2\ (1.896 \times 10^{11}\ N/M)}$

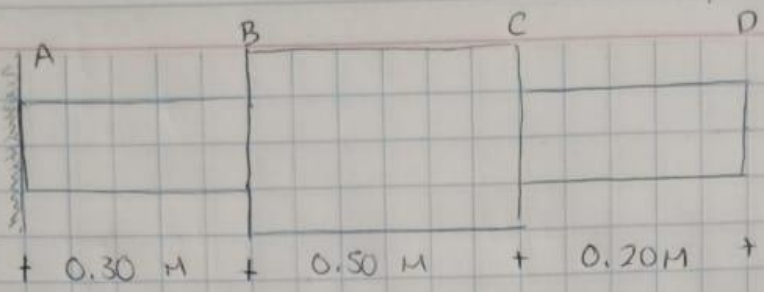
$\delta = \frac{2.7\ KN.M}{24,079,200\ M^2 \cdot N/M^2}$ $\quad \delta = 1.121 \times 10^{-7}\ M$

FLEXIÓN B = 1.121×10^{-7} M

+ A B = 6.537×10^{-8} M

B C = 1.121×10^{-07} M

= 1.7747×10^{-03}



A B

P = 10 KN
A = 4.657 X10^{-03} → 0.00466 M^2
LF = 1.80M
E = 103.9 GPA → 1.034 X10^{11}

$\delta = \frac{PLF}{AE}$

$\delta = \frac{10\,KN\,(1.80M)}{0.00466M^2\,(1.034\times10^{11}\,N/M^2)}$

$\delta = \frac{18\,KN.M}{481844000M^2.N/M^2}$

$\delta = 3.735\times10^{-08}$ /

B C

P = 10KN - 60 KN ⇒ - 50 KN
A = 0.0323 M^2
LF = 1.30M
E = 206.8 GPA → 2.068X10^{11}

$\delta = \frac{PLF}{AE}$ $\quad \delta = \frac{-50KN\,(1.30M)}{0.0323M^2\,(2.068\times10^{11}\,N/M^2)}$

$\delta = \frac{-65\,KN.M}{6679640000M^2.N/M^2}$ $\quad \delta = -9.737\times10^{-9}$ /

C D

$P = 10\,kN - 60\,kN - 98\,kN \Rightarrow -148\,kN$

$A = 0.000283\,m^2$

$LF = 0.25\,m$

$E = 206.8\,GPA \Rightarrow 2.068 \times 10^{11}$

$\delta = \frac{PLF}{AE}$ $\qquad \delta = \frac{-148\,kN\,(0.25\,m)}{0.000283\,m^2\,(2.068 \times 10^{11}\,N/m^2)}$

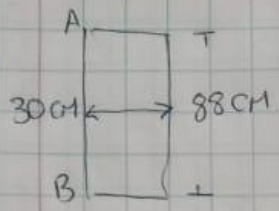
$\delta = \frac{-37\,kN.m}{58524400\,m^2.N/m^2}$ $\qquad \delta = -6.322 \times 10^{-7}$

$AB = 3.735 \times 10^{-08}$ $\qquad B = -9.731 \times 10^{-9}$

$BC = -9.731 \times 10^{-9}$

$CD = -6.322 \times 10^{-7}$

-6.04581×10^{-7}



CONCRETO ARMADO

$P = -25\,KN$

$A = 0.070\,M^2$

$CF = 88\,CM \rightarrow 0.88\,M$

$E = 210\,KG/MM^2 \rightarrow 30000\ KG/CM$

$$S = \frac{PLF}{AE}$$

$$S = \frac{-25\,KN(0.88M)}{0.070\,M^2(300000)} \qquad S = -\frac{22\,KN.M}{2100}$$

$$S = -1.0477 \times 10^{-03}$$