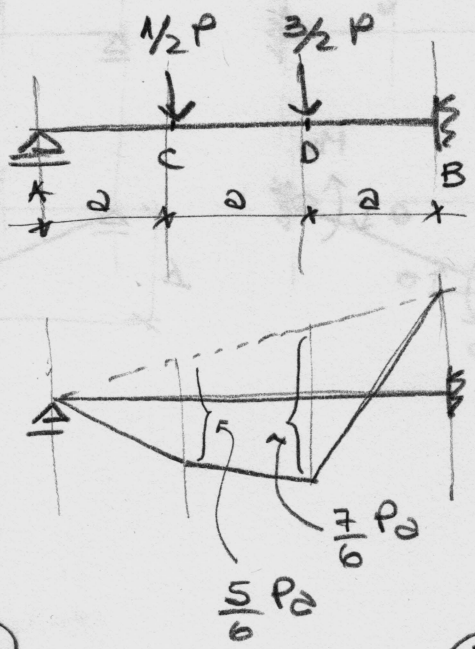
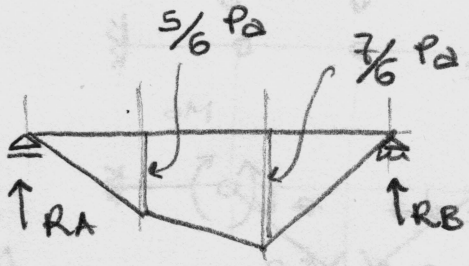
TP #7. A. NO LINEAL

Ej #1





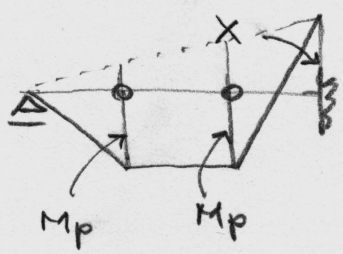
$\Sigma M^B = 0 \rightarrow R_A = \frac{5}{6} P$

$\Sigma F_y = 0 \rightarrow R_B = \frac{7}{6} P$

$$M_p = M_u = \frac{b d^2}{4} \sigma_y$$

EEA

(A)



$\frac{5}{6} Pa = Mp + \frac{1}{3} X$ (I)

$\frac{7}{6} Pa - \frac{5}{6} Pa = \frac{1}{3} X$ (II)

de (II) $x = Pa$

reemp en (I)

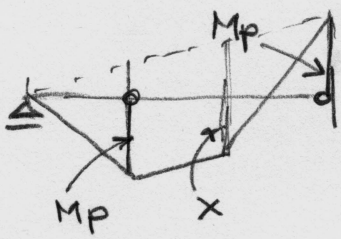
$Mp = \left(\frac{5}{6} - \frac{1}{3}\right) Pa$

$Mp = \frac{1}{2} Pa$

de donde

$X > Mp \rightarrow$ NO ADMISIBLE

(B)



$X + \frac{2}{3} Mp = \frac{7}{6} Pa$ (III)

$Mp + \frac{1}{3} Mp = \frac{5}{6} Pa$ (IV)

de (IV) $Mp = \frac{5}{8} Pa$

reemp en (III)

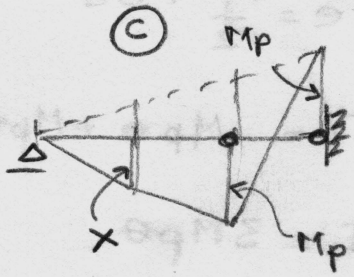
$X + \frac{2}{3} \frac{5}{8} Pa = \frac{7}{6} Pa$

$X = \frac{6}{8} Pa$

de donde

$X > Mp \rightarrow$ NO ADM.

(C)



$X + \frac{Mp}{3} = \frac{5}{6} Pa$ (V)

$Mp + \frac{2}{3} Mp = \frac{7}{6} Pa$ (VI)

de (VI) $Mp = \frac{7}{10} Pa$

reemp en (V)

$X + \frac{7}{30} Pa = \frac{5}{6} Pa$

$X = \frac{6}{10} Pa$

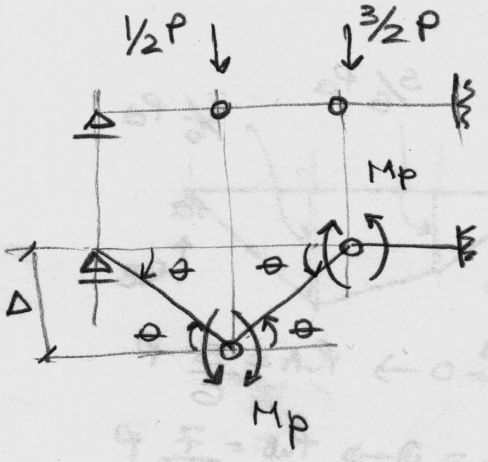
de donde

$X < Mp \rightarrow$ EEA

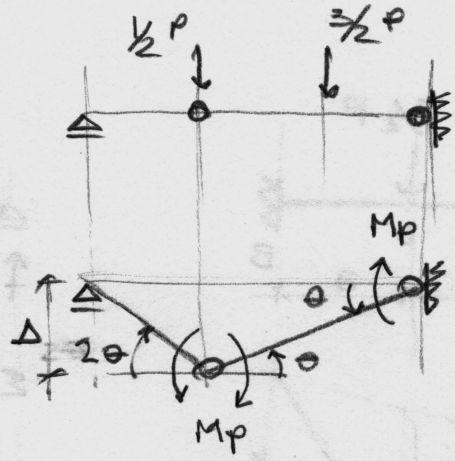
$Mp = \frac{7}{10} Pa$

$$P_u = \frac{10}{7} \frac{Mp}{a}$$

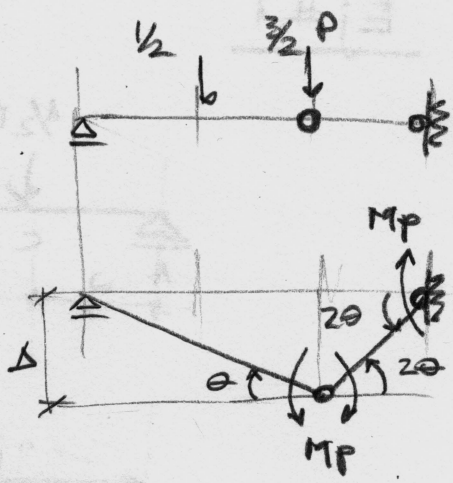
(A)



(B)



(C)



$Te = \frac{1}{2} P \Delta$

$\Delta = \theta a$

$Te = \frac{1}{2} P \theta a$

$Ti = Mp\theta + Mp\theta + Mp\theta$

$Ti = 3Mp\theta$

$Te = Ti$

$\frac{1}{2} P \cancel{\theta} a = 3Mp \cancel{\theta}$

$$P_{\mu}^{(A)} = 6\frac{Mp}{a}$$

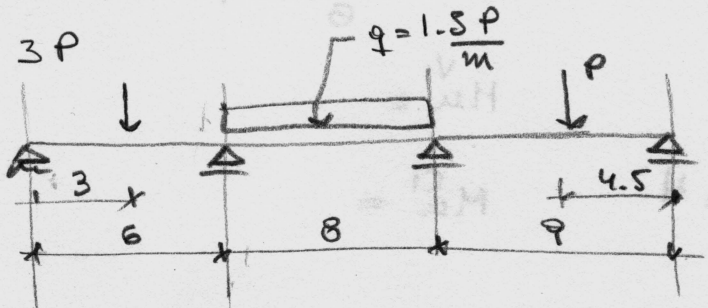
Ej # 2

$M_u = bd^2/4\,\phi\gamma$

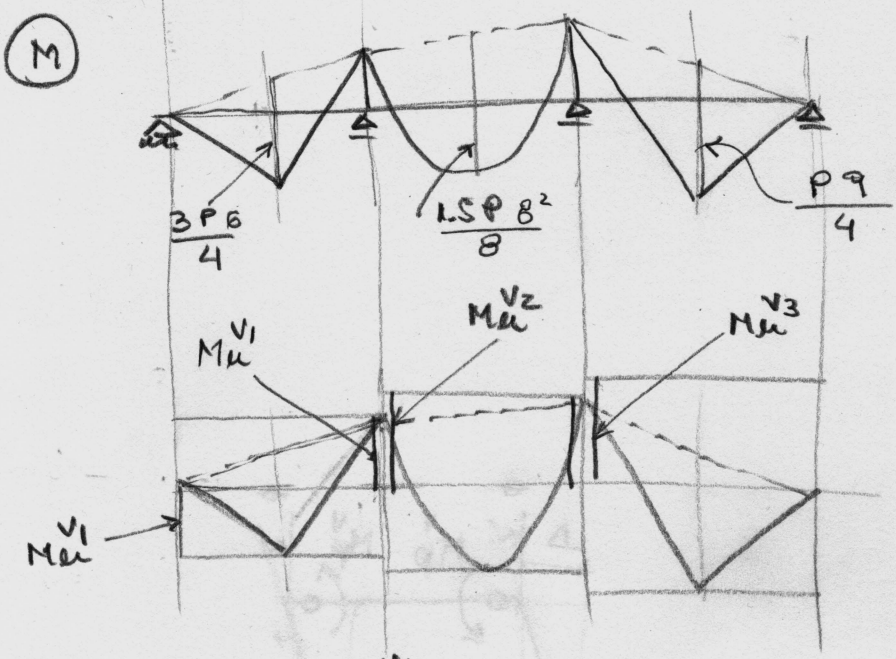
$M_u^{V1} =$

$M_u^{V2} =$

$M_u^{V3} =$



(M)



T1 : $\frac{3P6}{4} = \frac{M_u^{V1}}{2} + M_u^{V1} \rightarrow P_u =$

T2 : $\frac{1.5P8^2}{8} = M_u^{V2} + \frac{M_u^{V1} + M_u^{V2}}{2} \rightarrow P_u =$

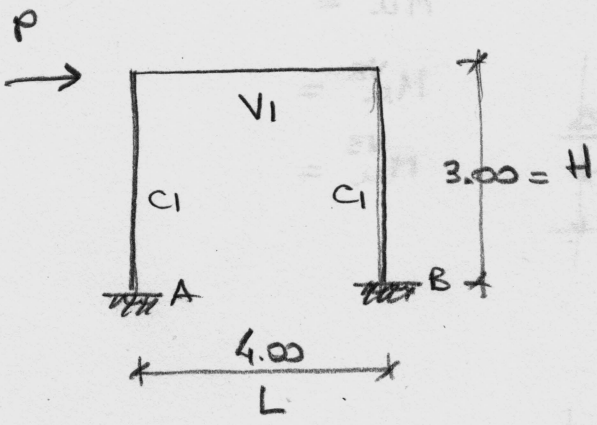
T3 : $\frac{P9}{4} = M_u^{V3} + \frac{M_u^{V2}}{2} \rightarrow P_u =$

Ej #3

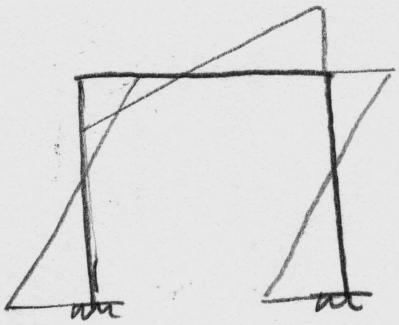
$$M_u = \frac{b d^2}{4} \sigma_y = M_p$$

$M_u^{V1} =$

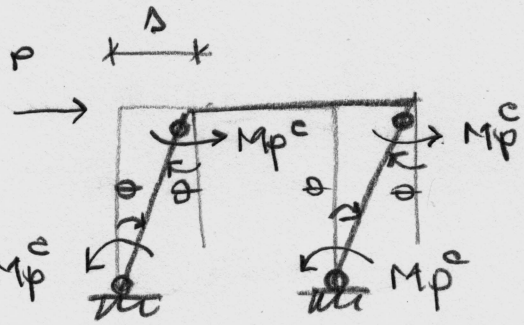
$M_u^{C1} =$



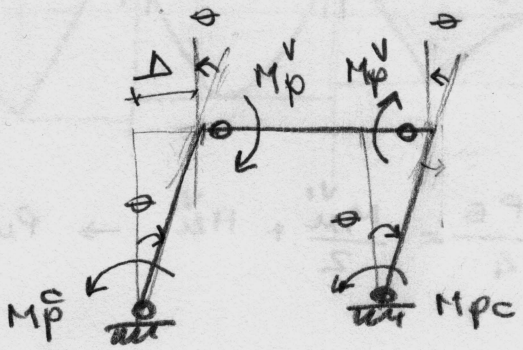
(M)



MCA



$\Delta = \theta H$



$\Delta = \theta H$

$T_e = P\Delta$

$T_e = PH\theta$

$T_i = 2M_p^c\theta + 2M_p^c\theta$

$T_i = 4M_p^c\theta$

$T_e = T_i$

$PH\theta = 4M_p^c\theta$

$$P_u = \frac{4 M_p^c}{H}$$