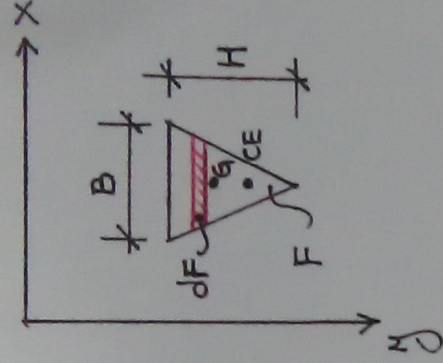
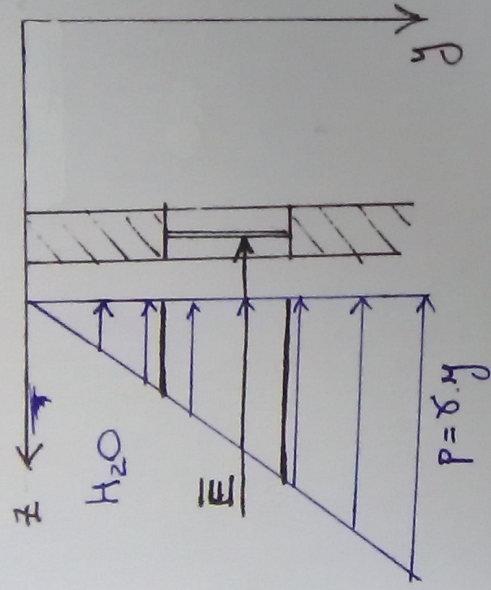


incógnitas: $|\bar{E}|$, y_{CE}



$$dF = B(y) \cdot dy$$

$$\bar{dE} = F \cdot d\bar{R} = \delta \cdot y \cdot dF \cdot \bar{R} \Rightarrow \bar{E} = \int_F \delta \cdot y \cdot dF \cdot \bar{R} = \delta \cdot \int_F y \cdot dF \cdot \bar{R} = \delta \cdot S_x \cdot \bar{R}$$

$$\Rightarrow \bar{E} = \delta \cdot F \cdot y_{CG} \quad (1)$$

TODA $\int_F \delta \cdot y^2 \cdot dF = E \cdot y_{CE}$ (NO $\delta \cdot y^2 \cdot dF = E \cdot y_{CE}$)
 tomo momentos respecto del eje X \rightarrow

$$\Rightarrow \int_F \delta \cdot y^2 \cdot dF = y_{CE} \cdot E$$

$$\Rightarrow \delta \int_F y^2 \cdot dF = E \cdot y_{CE} \rightarrow \delta \cdot J_x = E \cdot y_{CE}$$

$$\therefore y_{CE} = \frac{\delta \cdot J_x}{E} = \frac{\delta \cdot J_x}{\delta \cdot F \cdot y_{CG}} = \frac{J_x}{S_x} \quad (2)$$

$$J_x = J_{x_{CG}} + F \cdot y_{CG}^2 \quad \text{o/ steiner} \rightarrow \text{con } i_{x_{CG}}^2 \cdot F = J_{x_{CG}}$$

$$J_x = F \cdot i_{x_{CG}}^2 + F \cdot y_{CG}^2 = F \cdot (i_{x_{CG}}^2 + y_{CG}^2) \Rightarrow \text{por } (2)$$

$$\Rightarrow y_{CE} = \frac{F \cdot (i_{x_{CG}}^2 + y_{CG}^2)}{F \cdot y_{CG}} = y_{CG} + \frac{i_{x_{CG}}^2}{y_{CG}}$$

! CE se ubica por debajo de G!

$$M_x = \int_F \delta \cdot y \cdot dF \cdot y = E \cdot y_{CE}$$

no conozco su posición!!