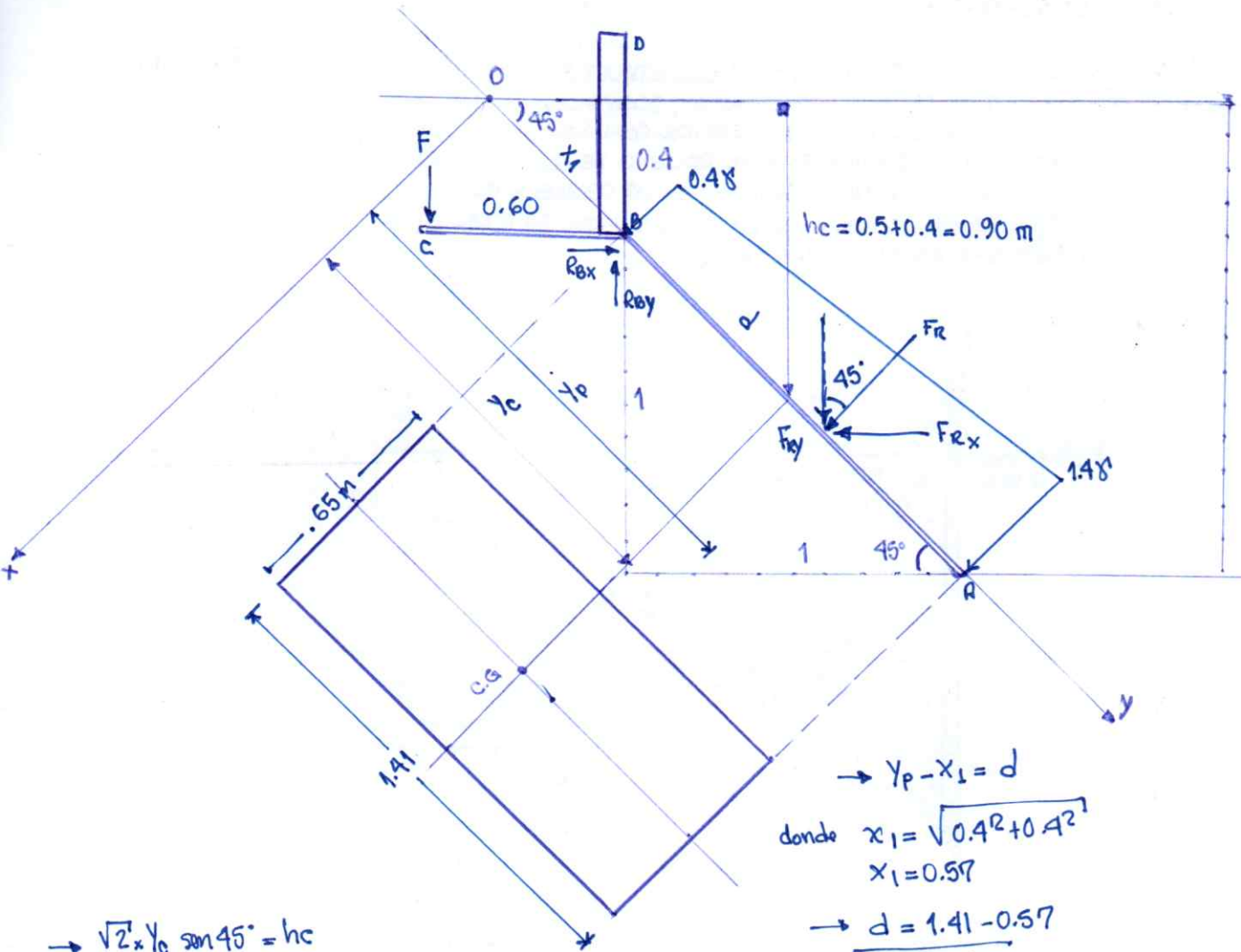


TA 2 → D & E → PREGUNTA N° 01:



→ $\sqrt{2} \times y_c \sin 45^\circ = h_c$

$\sin 45^\circ = \frac{h_c}{y_c}$

→ $y_c = \frac{h_c}{\sin 45^\circ} = \frac{h_c}{\frac{1}{\sqrt{2}}}$

$y_c = \frac{h_c \times 2}{\sqrt{2}}$

$y_c = \frac{0.90 \times 2}{1.41}$

$y_c = 1.28 \text{ m}$

→ $I_{xx} = \frac{b \times h^3}{12} = \frac{0.65 \times 1.41^3}{12}$

$I_{xx} = 0.1518411375 \text{ m}^4$

→ $y_p = y_c + \frac{I_{xx}}{y_c \times A_m} = 1.28 + \frac{0.1518411375}{1.28 \times 1.41 \times 0.65}$

$y_p = 1.41 \text{ m}$

→ $F_r = \gamma \times h_c \times A_m$
 $= 9810 \times 0.90 \times 0.9165$

$F_r = 8.092 \text{ KN}$ ✓

→ $y_p - x_1 = d$
 donde $x_1 = \sqrt{0.4^2 + 0.4^2}$
 $x_1 = 0.57$
 → $d = 1.41 - 0.57$
 $d = 0.84 \text{ m}$

→ hallamos F

$\sum M_B = 0$

$F \times 0.60 = 0.84 \times 8.092$

$F = \frac{0.84 \times 8.092}{0.60}$

$F = 11.329 \text{ KN}$ ✓

→ DESCOMPONER F_r EN F_{rx} Y F_{ry}

$\sin 45^\circ = \frac{F_{rx}}{F_r} \rightarrow F_{rx} = \sin 45^\circ \times 8.092 \text{ KN}$

$F_{rx} = 5.705 \text{ KN} = F_{ry}$

→ HALLAMOS REACCIONES EN EL PASADOR B

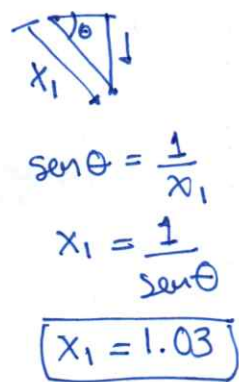
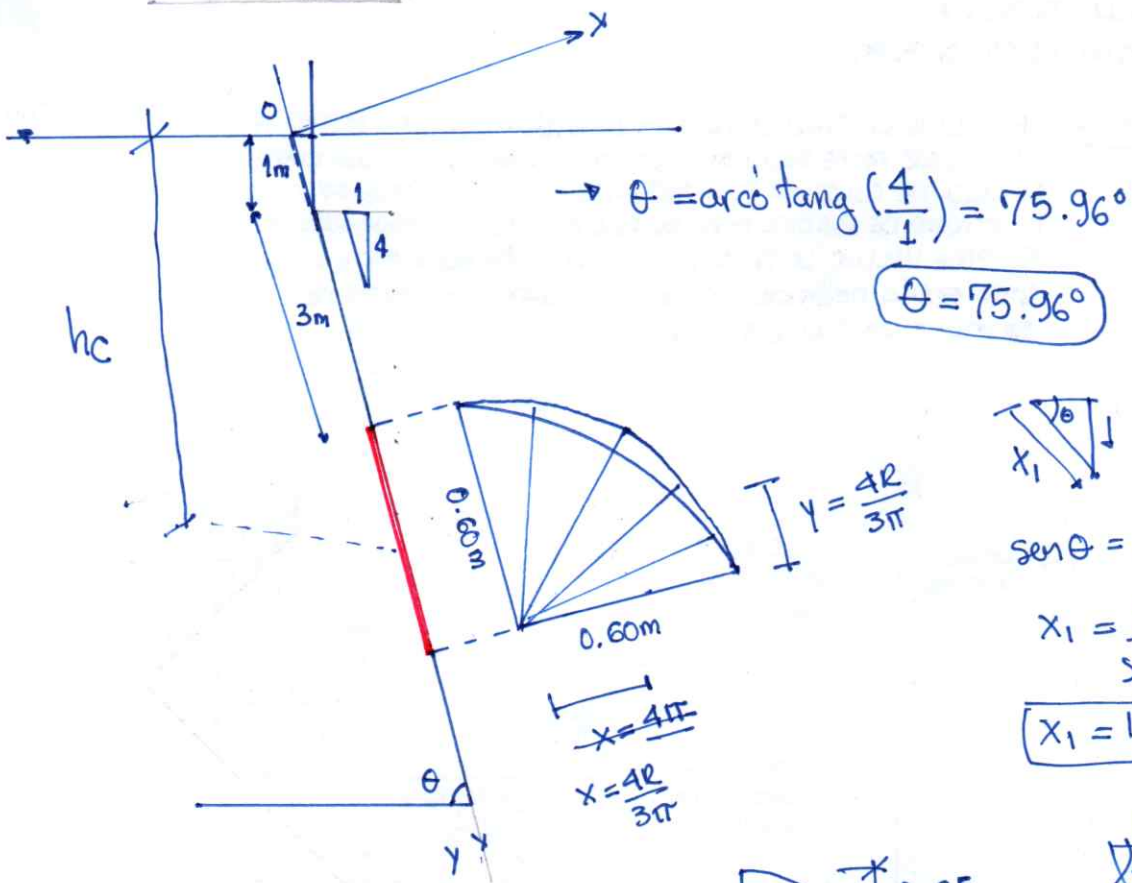
$\sum F_x = 0$

$R_{bx} - F_{rx} = 0$

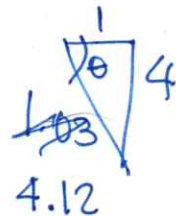
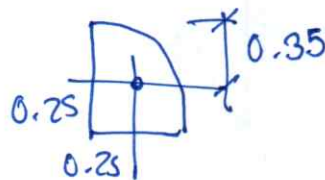
$R_{bx} = F_{rx} \Rightarrow R_{bx} = 5.705 \text{ KN}$ ✓

$\sum F_y = 0$

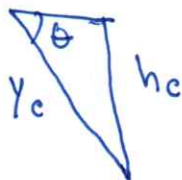
$F + F_{ry} = R_{by} \rightarrow R_{by} = 17.034 \text{ KN}$ ✓



$\rightarrow \bar{y} = \frac{4R}{3\pi} = \frac{4 \times 0.60}{3 \times \pi} = 0.25 \text{ m}$



$\rightarrow y_c = 1.03 + 3 + 0.35 = 4.38$



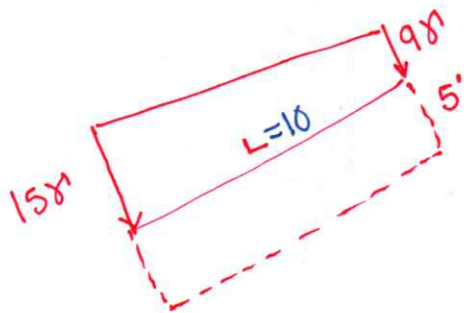
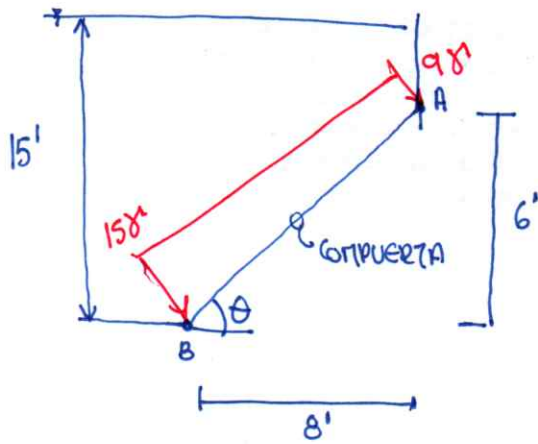
$\rightarrow \frac{hc}{y_c} = \sin \theta$

$hc = \sin \theta \times y_c \rightarrow hc = \frac{4}{4.12} \times 4.38$
 $hc = \frac{4}{1.03} \times 4.38 \rightarrow hc = 4.25 \text{ m}$

$\rightarrow F_R = \gamma \times hc \times A_D$
 $= 9810 \times 4.25 \times \frac{\pi \times R^2}{4}$

$F_R = 11,788.28 \text{ N}$

TA2 → Preguntita N° 03 (D.A.E)



$$\rightarrow L = \sqrt{8^2 + 6^2}$$

$$L = 10$$

$$\rightarrow Fe = \sqrt{V} \gamma'$$

$$\gamma' = 62.4 \frac{\text{Lb-f}}{\text{pie}^3}$$

$$\bar{y} = \frac{10 \times (98' + 158' \times 2)}{3 \times (98' + 158')}$$

$$\bar{y} = \frac{390 \times 8'}{72}$$

$$\bar{y} = 5.42'$$

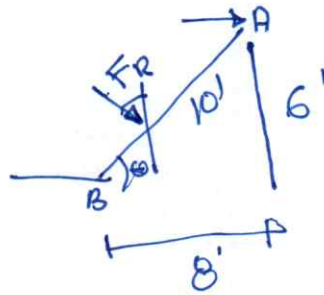
$$\rightarrow V_{\square} = \left[10 \text{ pie} \times \frac{(98' + 158')}{2} \right] \times 5' \text{ pie}$$

$$V_{\square} = 120 \times 62.4$$

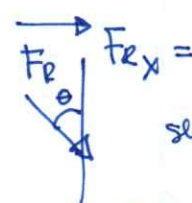
$$Fe = 467,251.2 \text{ Lb-f}$$

$$Fe = 467.25 \text{ K Lb-f}$$

$$Fe = 1,362.816 \text{ K Lb-f}$$



$$\begin{aligned} \sum \Pi_B = 0 \\ P \times 6 = Fe \times 4.88 \\ P = \frac{Fe \times 4.88}{6} \end{aligned}$$



$$\sin \theta = \frac{Fe_y}{Fe}$$

$$Fe_x = \sin \theta \times Fe = \frac{6}{10} \times 467.25$$

$$Fe_x = 280.35 \text{ KN}$$

$$\rightarrow FA = 280.35 \text{ K Lb-f}$$

$$\rightarrow V = 5 \text{ pie} \times 24 \gamma' \times 5 \text{ pie}$$

$$\frac{\text{Lb-f}}{\text{pie}^2} \quad FR = 37,440 \text{ Lb-f}$$

$$P = 22,464 \text{ Lb-f}$$

$$P = 28,579.2 \text{ Lb-f}$$