



CENTROS DE GRAVEDAD

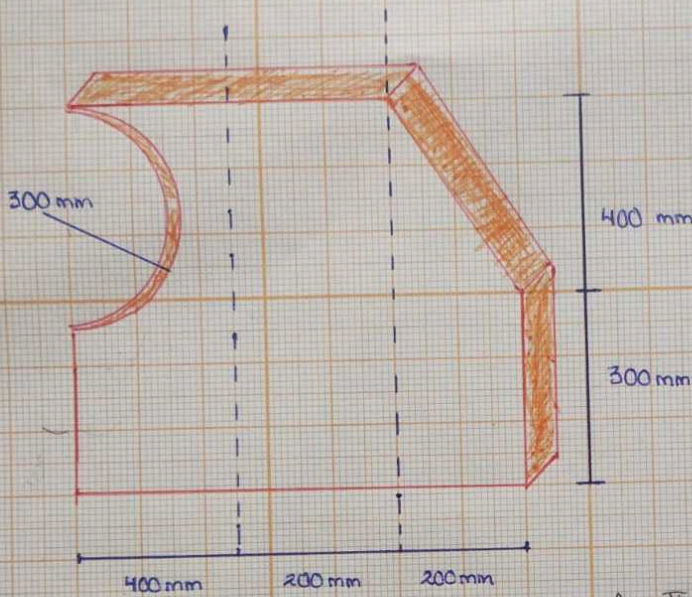
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MATERIA: ESTÁTICA PARA LA ARQUITECTURA

3ER CUATRIMESTRE, 2DA UNIDAD

MAESTRO: PEDRO ALBERTO GARCIA LOPEZ

CENTROS DE GRAVEDAD



$$C_x = \frac{A_1 x_1 + A_2 x_2}{\Sigma A}$$

$$C_y = \frac{A_1 y_1 + A_2 y_2}{\Sigma A}$$

$$A_1 = 800 \text{ mm} \times 700 \text{ mm} = 560.000 \text{ mm}^2$$

$$x_1 = 800 \text{ mm} / 2 = 400 \text{ mm}$$

$$y_1 = 700 \text{ mm} / 2 = 350 \text{ mm}$$

$$A_2 = \frac{\pi \cdot r^2}{2} \rightarrow \frac{3,1416 \cdot (300 \text{ mm})^2}{2} = 141.372 \text{ mm}^2$$

$$x_2 = \frac{4(300 \text{ mm})}{3(3,1416)} = 127,32 = 800 \text{ mm} = 672,68$$

$$y_2 = 300 + 100 = 400 \text{ mm}$$

$$A_3 = 400 \times 200 = 80.000 / 2 = 40.000 \text{ mm}^2$$

$$x_3 = \frac{200}{3} = 66,666$$

$$y_3 = \frac{400}{3} = 133,333$$

$$\Sigma A = 560.000 \text{ mm}^2 - 141.372 \text{ mm}^2 - 40.000 \text{ mm}^2$$

$$C_{gx} = \frac{560.000 \text{ mm}^2 (400) - 141.372 (672,68) + 40.000 (66,666)}{378,628}$$

$$C_{gx} = 333,403 \text{ mm}$$

$$C_{gy} = \frac{560.000 (350) - 141.372 (400) + 40.000 (133,333)}{378,628}$$

$$C_{gy} = 354,220 \text{ mm}$$