



Mi Universidad

Centros de gravedad

Nombre del Alumno dulce María Guadalupe Jiménez Pérez

Nombre del tema centros de gravedad

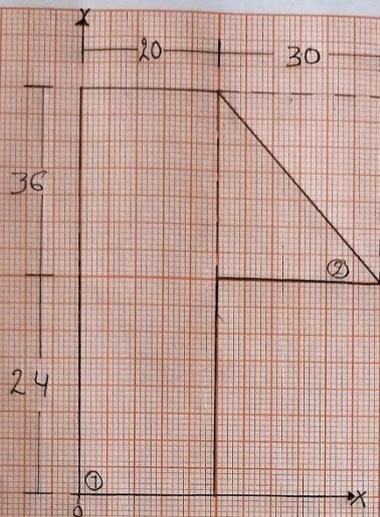
Parcial 2

Nombre de la Materia estática para la arquitectura

Nombre del profesor Pedro Alberto García López

Nombre de la Licenciatura arquitectura

Cuatrimestre 3



$$A_1 = 20 \text{ cm} (60 \text{ cm}) = 1,200 \text{ cm}^2$$

$$x_1 = \frac{b}{2} = \frac{20 \text{ cm}}{2} = 10 \text{ cm}$$

$$y_1 = \frac{h}{2} = \frac{60 \text{ cm}}{2} = 30 \text{ cm}$$

$$A_2 = 30 \text{ cm} (36 \text{ cm}) = 540 \text{ cm}^2$$

$$x_2 = \frac{b}{3} = \frac{30}{3} = 10 \text{ cm} + 20 = 30 \text{ cm}$$

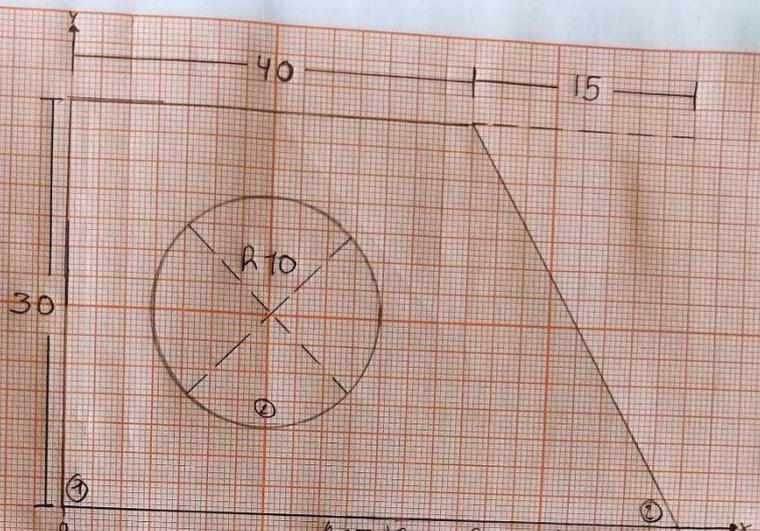
$$y_2 = \frac{h}{3} = \frac{36}{3} = 12 \text{ cm} + 20 = 32 \text{ cm}$$

$$C_{gx} = \frac{1,200 \text{ cm} (10 \text{ cm}) + 540 \text{ cm} (30 \text{ cm})}{1,200 \text{ cm} + 540 \text{ cm}} = \frac{28,200}{1,740}$$

$$= 16.20$$

$$C_{gy} = \frac{1,200 \text{ cm} (30 \text{ cm}) + 540 \text{ cm} (32 \text{ cm})}{1,200 \text{ cm} + 540 \text{ cm}} = \frac{53,280}{1,740}$$

$$= 30.62$$



$$A_1 = 40 \text{ cm} (30 \text{ cm}) = 1,200 \text{ cm}^2$$

$$x_1 = \frac{40 \text{ cm}}{2} = 20 \text{ cm}$$

$$y_1 = \frac{30 \text{ cm}}{2} = 15 \text{ cm}$$

$$A_2 = 15 \text{ cm} (30 \text{ cm}) = 450 \text{ cm}^2$$

$$x_2 = \frac{15 \text{ cm}}{3} = 5 \text{ cm}$$

$$y_2 = \frac{30 \text{ cm}}{3} = 10 \text{ cm}$$

$$A = 3.1416 (10 \text{ cm})^2 = 157.08 \text{ cm}^2$$

$$x = \frac{D}{2} = \frac{20 \text{ cm}}{2} = 10 \text{ cm}$$

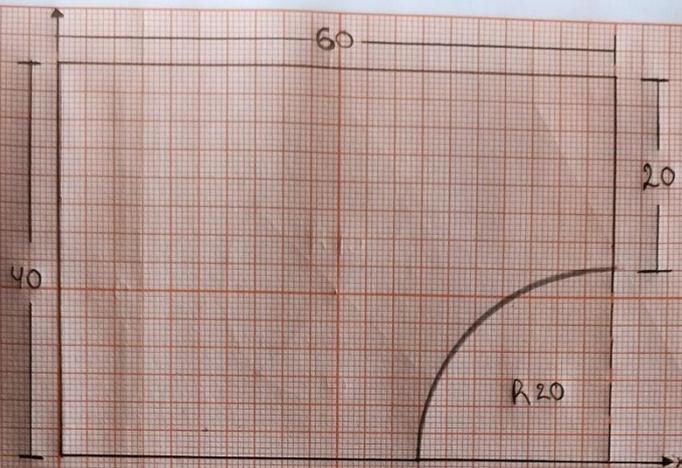
$$y = \frac{4 (10 \text{ cm})^2}{3 (3.1416)} = \frac{40 \text{ cm}}{9.42} = 4.24 \text{ cm}$$

$$C_{gx} = \frac{1,200 \text{ cm}^2 (20 \text{ cm}) - 450 \text{ cm}^2 (5 \text{ cm}) - 157.08 \text{ cm}^2 (10 \text{ cm})}{1,200 \text{ cm}^2 - 450 \text{ cm}^2 - 157.08 \text{ cm}^2}$$

$$= 34.033 \text{ cm}$$

$$C_{gy} = \frac{1,200 \text{ cm}^2 (15 \text{ cm}) - 450 \text{ cm}^2 (10 \text{ cm}) - 157.08 \text{ cm}^2 (4.24 \text{ cm})}{1,200 \text{ cm}^2 - 450 \text{ cm}^2 - 157.08 \text{ cm}^2}$$

$$= 21.645 \text{ cm}$$



$$A_1 = 60 \text{ cm} (40 \text{ cm}) = 2400 \text{ cm}^2$$

$$X_1 = \frac{b}{2} \rightarrow \frac{60 \text{ cm}}{2} = 30 \text{ cm}$$

$$Y_1 = \frac{h}{2} \rightarrow \frac{40 \text{ cm}}{2} = 20 \text{ cm}$$

$$A_2 = 3.1416 (20 \text{ cm})^2 = 62.83 \text{ cm}^2$$

$$X_2 = \frac{4(20 \text{ cm})}{3 \cdot 3.1416} = \frac{80 \text{ cm}}{9.42} = 8.492 \text{ cm}$$

$$Y_2 = \frac{4r}{3\pi} = 8.492 \text{ cm}$$

$$A = \frac{3.1416(20^2)}{4} = \frac{3.1416(400 \text{ cm}^2)}{4} = 314.16 \text{ cm}^2$$

$$C_{gx} = \frac{2400 \text{ cm}^2 (30 \text{ cm}) - 62.83 \text{ cm}^2 (8.492 \text{ cm})}{2400 \text{ cm}^2 - 62.83 \text{ cm}^2} = 30.578 \text{ cm}$$

$$C_{gy} = \frac{2400 \text{ cm}^2 (20 \text{ cm}) - 62.83 \text{ cm}^2 (8.492 \text{ cm})}{2400 \text{ cm}^2 - 62.83 \text{ cm}^2} = 20.309 \text{ cm}$$