



12 de Junio del 2022

## Universidad del Sureste

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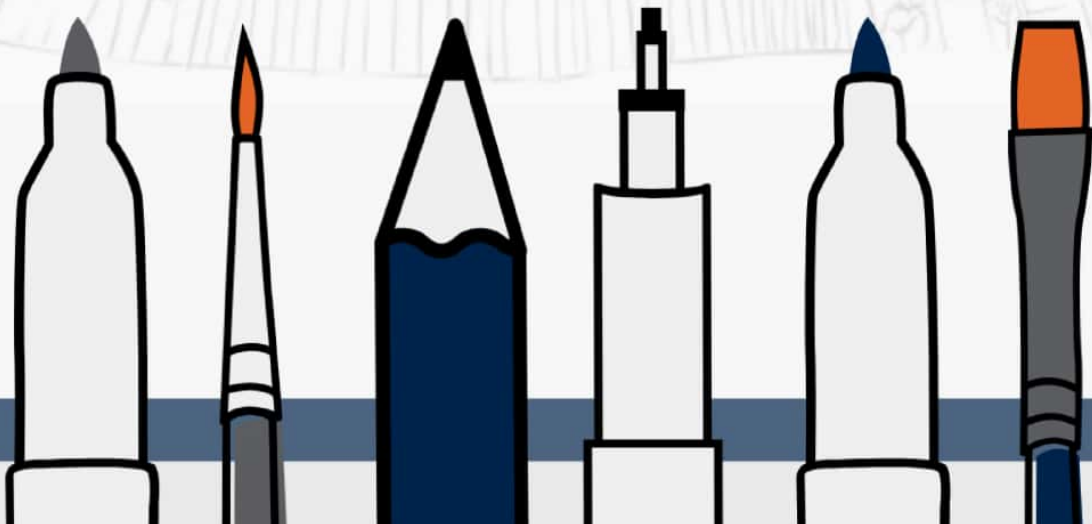
Nombre del profesor: Pedro Alberto Garcia Lopez

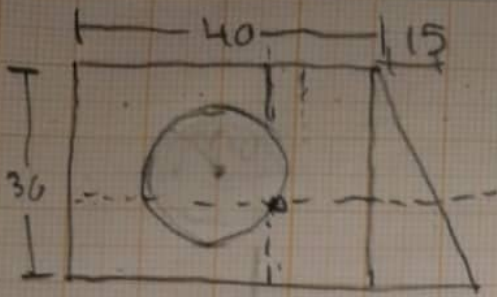
Nombre de la materia: Estática para la arquitectura

Nombre del trabajo: Centros de Gravedad

Carrera: Arquitectura

Grado: 3er Cuatrimestre





$$A_1 = 40 \cdot 30 = 1200 \text{ cm}^2$$

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

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

$$A_2 = \frac{15 \cdot 30}{2} = 225$$

$$x_2 = \frac{b}{3} = \frac{15}{3} = 5 + 40 = 45$$

$$y_2 = \frac{h}{3} = \frac{30}{3} = 10$$

$$X = 26.47$$

$$Y = 12.57$$

$$A_2 = 3.1416 (10^2) = 314.16$$

$$x_2 = 10 = 10 + 15 = 25$$

$$y_2 = 10 = 10 + 10 = 20$$

$$\frac{1200(20) - 314.16(15) + 225(45)}{1200 - 314.16 + 225}$$

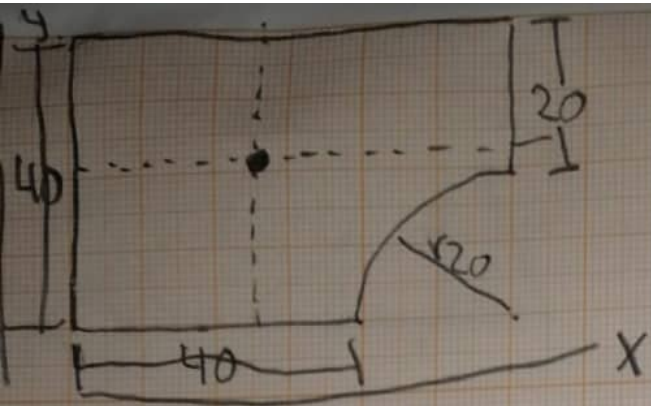
$$1200 - 314.16 + 225$$

$$\frac{729712.6}{1110.84} = 26.47$$

$$\frac{1200(15) - 314.16(20) + 225(10)}{1200 - 314.16 + 225}$$

$$1200 - 314.16 + 225$$

$$\frac{13966.8}{1110.84} = 12.57$$



$$A_1 = bh = 60 \cdot 40 = 2400 \text{ cm}^2$$

$$x_1 = \frac{b}{2} = \frac{60}{2} = 30$$

$$y_1 = \frac{h}{2} = \frac{40}{2} = 20$$

$$A_2 = \frac{\pi r^2}{4} = \frac{3.1416(20^2)}{4} = 314.16 \text{ cm}^2$$

$$x_2 = \frac{4r}{3\pi} = \frac{80}{9.42} = 8.49 = 60 - 8.49 = 51.51$$

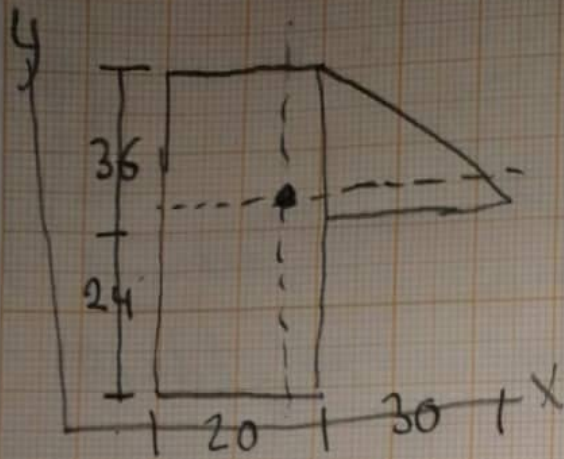
$$y_2 = \frac{4r}{3\pi} = \frac{80}{9.42} = 8.49$$

$$\frac{2400(30) - 314.16(51.51)}{2400 - 314.16} =$$

$$\frac{55817.62}{2085.84} = x = 26.77$$

$$\frac{2400(20) - 314.16(8.49)}{2400 - 314.16}$$

$$\frac{43332.79}{2085.84} = y = 21.73$$



$$A_1 = 20(60) = 1200 \text{ cm}^2$$

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

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

$$A_2 = \frac{bh}{2} = \frac{30 \cdot 36}{2} = 540$$

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

$$y_2 = \frac{h}{3} = \frac{36}{3} = 12 + 24 = 36$$

$$\frac{A_1(x_1) + A_2(x_2)}{A_1 + A_2}$$

$$\frac{1200(10) + 540(30)}{1200 + 540}$$

$$1200 + 540$$

$$\frac{28200}{1740} = X = 16.20$$

$$\frac{A_1(y_1) + A_2(y_2)}{A_1 + A_2}$$

$$\frac{1200(30) + 540(36)}{1200 + 540}$$

$$1200 + 540$$

$$\frac{55440}{1740} = y = 31.86$$