UDS
PASIÓN POR EDUCAR

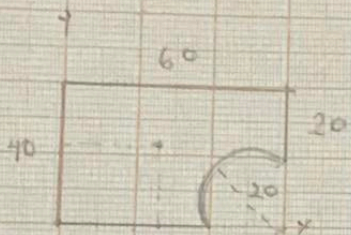**Nombre de alumno:** Elías Javier Bravo Pérez

Nombre del profesor: Arq. Pedro Alberto García López

Nombre del trabajo: Centros de Gravedad

Materia: Estática para la arquitectura.

Grado: 3er Cuatrimestre.

Carrera: Arquitectura.

$A_1 = 60 \times 40 = 2400 \ cm^2$

$x_1 = \dfrac{60}{2} = 30 cm$

$y_1 = \dfrac{40}{2} = 20 cm$

$A_2 = \dfrac{3.1416 \ (20)^2}{4} = 314.16$
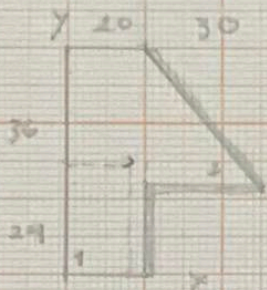
$x_2 = \dfrac{4(20)}{3(3.1416)} = \dfrac{80}{9.4248} = 8.49 = 51.51$

$60 - 8.49 = 51.51$

$y_2 = \dfrac{4(20)}{3(3.1416)} = 8.49$

$\bar{x} = \dfrac{2400(30) - 314.16(51.51)}{2400 - 314.16} = \dfrac{55,811.62}{2085.84}$

$= 26.76 \ cm$

$\bar{y} = \dfrac{2400(20) - 314.16(8.49)}{2400 - 314.16} = \dfrac{45,332.79}{2085.84}$

$= 21.73$

$A_1 = (20)(60) = 1200$

$X_1 \quad \dfrac{b}{2} \quad \dfrac{20}{2} \quad 10$
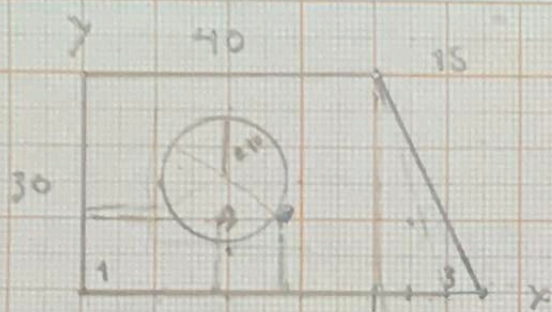
$Y_1 \quad \dfrac{h}{2} = \dfrac{60}{2} \quad 30$

$A_2 = \dfrac{(30)(36)}{2} = 540$

$X_2 = \dfrac{b}{3} = \dfrac{30}{3} = 10 + 20 = 30$

$Y_2 = \dfrac{h}{3} \quad \dfrac{36}{3} = 12 + 24 = 36$

$\overline{C}gx = \dfrac{1200(10) + 540(30)}{1200 + 540} = \dfrac{28200}{1740} = 16.20$

$\overline{C}gy = \dfrac{1200(30) + 540(36)}{1200 + 540} = \dfrac{55440}{1740} = 31.86$

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

$$X_1 = \frac{40}{2} = 20$$

$$Y_1 = \frac{30}{2} = 15$$

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

$$X_2 = a = 10 + 5 = 15$$

$$Y_2 = 1 + 10 + 10 = 20$$

$$A_3 = \frac{(15)(30)}{2} = 225$$

$$X_3 = \frac{b}{3} = \frac{15}{3} = 5 + 40 = 45$$

$$Y_3 = \frac{h}{3} = \frac{30}{3} = 10$$

$$C_{g x} = \frac{1200(20) - 314.16(15) + 225(45)}{1200 - 314.16 + 225}$$

$$= \frac{29\,712.6}{1110.84}$$

$$27,000$$
$$- 4712.4$$
$$+ 10,125$$

$$= 26.47$$

$$C_{g y} = \frac{1200(15) - 314.16(20) + 225(10)}{1200 - 314.16 + 225}$$

$$18,000$$
$$- 6283.2$$
$$+ 2250$$

$$= \frac{13,966.8}{1110.84}$$

$$= 12.57$$