

Pregunta 3:

Deter. el centroide del área sombreada:

Area del Triangulo

$$A = \frac{b \cdot h}{2}$$

$$A_T = \frac{6 \cdot 7}{2} = 21 \text{ m}^2$$

$$\text{Eje X: } \frac{h}{3} + a = \frac{7}{3} + 7 = \frac{28}{3} \text{ m}$$

$$\text{Eje Y: } \frac{b}{2} + a = \frac{6}{2} + 2 = 5 \text{ m}$$

Area del Cuadrado

$$A = L \cdot L$$

$$A = 6 \cdot 6 = 36 \text{ m}^2$$

$$\text{Eje x: } 3 + 1 = 4 \text{ m}$$

$$\text{Eje Y: } 3 + 2 = 5 \text{ m}$$

eje x

Area del circulo

$$A = \pi R^2$$

$$A = \pi 2^2 = 4\pi \text{ m}^2$$

Se resta

$$\bar{X} = \frac{21\left(\frac{28}{3}\right) + 36(4) - 4\pi(4)}{21 \text{ m}^2 + 36 \text{ m}^2 - 4\pi \text{ m}^2}$$

$$\boxed{\bar{X} = 6,52 \text{ m}}$$

$$\text{Eje x: } 3 + 1 = 4 \text{ m}$$

$$\text{Eje Y: } 3 + 2 = 5 \text{ m}$$

eje y

$$\bar{Y} = \frac{(21 \cdot 5) + (36 \cdot 5) - (4\pi \cdot 5)}{21 \text{ m}^2 + 36 \text{ m}^2 - 4\pi \text{ m}^2}$$

Centroide

$$R: \begin{pmatrix} 6,52 \\ 5 \end{pmatrix}$$

x y

$$\boxed{\bar{Y} = 5}$$