



#1: [CaseMode := Sensitive, InputMode := Word]

#2: $0 = 10 - x^2$

#3: $x = -\sqrt{10} \vee x = \sqrt{10}$

#4: $Px := \sqrt{10}$

Área 1: rectángulo, área 2: f(x)

#5:
$$\left[A1 := 5 \cdot 10, A2 := \int_0^{Px} (10 - x^2) dx, A := A1 + A2 \right]$$

#6: $[A1 := 50, A2 := 21.08185106, A := 71.08185106]$

#7:
$$\left[A1 := 50, A2 := \frac{20 \cdot \sqrt{10}}{3}, A := \frac{20 \cdot \sqrt{10}}{3} + 50 \right]$$

Coordenadas Ycg del centroide:

#8:
$$A1 \cdot 5 + \int_0^{Px} (10 - x^2) \cdot \frac{10 - x^2}{2} dx$$

$$Y_{cg} := \frac{\quad}{A}$$

#9: $Y_{cg} := 4.703414433$

$$\#10: \quad Y_{cg} := \frac{193}{37} - \frac{6 \cdot \sqrt{10}}{37}$$

Inercia respecto al eje x:

$$\#11: \quad \left[I_{x1} := \frac{1}{3} \cdot 5 \cdot 10^3, I_{x2} := \int_0^{Px} \frac{1}{3} \cdot (10 - x)^2 dx, I_x := I_{x1} + I_{x2} \right]$$

$$\#12: \quad [I_{x1} := 1666.666666, I_{x2} := 481.8708815, I_x := 2148.537548]$$

$$\#13: \quad \left[I_{x1} := \frac{5000}{3}, I_{x2} := \frac{3200 \cdot \sqrt{10}}{21}, I_x := \frac{3200 \cdot \sqrt{10}}{21} + \frac{5000}{3} \right]$$

Inercia respecto al eje centroidal X_{cg} usando teorema de Steiner o de Ejes Paralelos:

$$\#14: \quad I_{xcg} = I_x - A \cdot Y_{cg}^2$$

$$\#15: \quad I_{xcg} = 576.0572094$$

$$\#16: \quad I_{xcg} = \frac{13940 \cdot \sqrt{10}}{259} + \frac{45050}{111}$$