

MATERIA:
ESTÁTICA PARA LA ARQUITECTURA

TRABAJO:
PROBLEMAS DE CÁLCULO

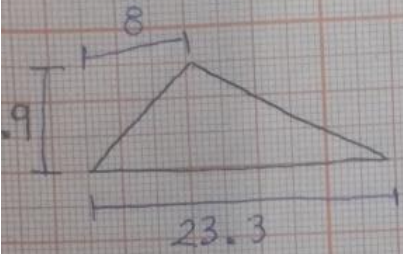
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GRADO DE ESCOLARIDAD:
TERCER CUATRIMESTRE

FECHA:
31 DE JULIO DEL 2022





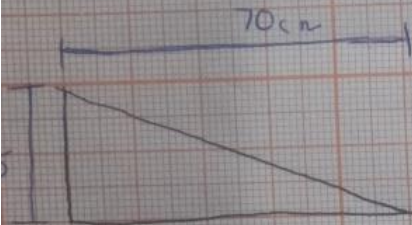
$$I_y = \frac{23.3 \text{ cm} (3.8 \text{ cm})}{36} [(8 \text{ cm} \times 23.3 \text{ cm}) + (23.3 \text{ cm})^2]$$

$$= \frac{29.513 \text{ cm} (64 \text{ cm} - 186.4 \text{ cm}^2 + 542.89 \text{ cm}^2)}{36}$$

$$= \frac{29.513 \text{ cm} (420.49 \text{ cm})}{36}$$

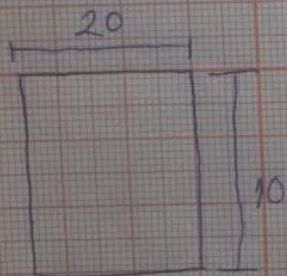
$$I_y = 12,409.921 \text{ cm}^4$$

$$I_y = 23,412.367$$



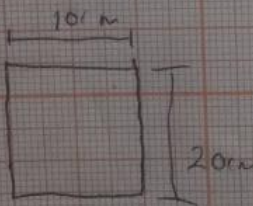
$$I_x = \frac{70 \text{ cm} (15 \text{ cm})^3}{36} = 6,562.50 \text{ cm}^4$$

$$I_y = \frac{(70 \text{ cm})^2 15 \text{ cm}}{36} = 142,916.66 \text{ cm}^4$$



$$I_x = \frac{20 \text{ cm} (10 \text{ cm})^3}{12} = 1,666.66 \text{ cm}^4$$

$$I_y = \frac{(20 \text{ cm})^2 10 \text{ cm}}{12} = \frac{80,000}{12} = 6,666.66 \text{ cm}^4$$



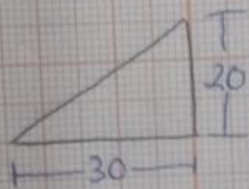
$$I_x = \frac{10 \text{ cm} (20 \text{ cm})^3}{12} = 6,666.66 \text{ cm}^4$$

$$I_y = \frac{(10 \text{ cm})^2 20 \text{ cm}}{12} = 1,666.66 \text{ cm}^4$$



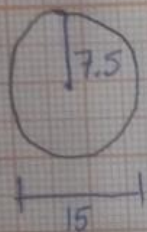
$$I_x = \frac{17 \text{ cm} (30 \text{ cm})^3}{12} = 38,250 \text{ cm}^4$$

$$I_y = \frac{(17 \text{ cm})^2 30}{12} = 12,285.30 \text{ cm}^4$$



$$\bar{I}_x = \frac{bh^3}{36} = \frac{30(20)^3}{36} = \frac{240\,000}{36} = 6,666.667 \text{ cm}^4$$

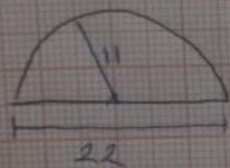
$$\bar{I}_y = \frac{b^3h}{36} = \frac{540,000}{36} = 15,000 \text{ cm}^4$$



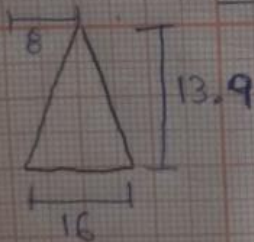
$$\bar{I}_x = \bar{I}_y = \frac{\pi R^4}{4} = \frac{3.1416(7.5)^4}{4} = 2,485.054 \text{ cm}^4$$

$$\bar{I}_x = \frac{bh^3}{12} = \frac{25 \text{ cm}(5)^3}{12} = 260.416 \text{ cm}^4$$

$$\bar{I}_y = \frac{(25 \text{ cm})^3(5 \text{ cm})}{12} = 6,510.416$$

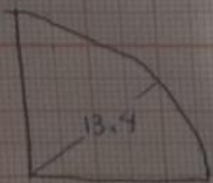


$$\bar{I}_x = 0.1098 R^4 = 0.1098 (11 \text{ cm})^4 = 1,607.581$$



$$\bar{I}_x = \frac{16 \text{ cm}(13.9)^3}{36} = 1,193.608 \text{ cm}^4$$

$$\bar{I}_y = \frac{(16 \text{ cm})^3(13.9)}{48} = 1,186.133 \text{ cm}^4$$



$$\bar{I}_x = \bar{I}_y = 0.05488 (13.9)^4 = 1,769.429$$