



Nombre de alumno: ZULIBETH VAZQUEZ NORIEGA

Nombre del profesor: PEDRO ALBERTO GARCÍA

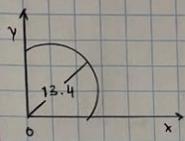
Nombre del trabajo: MOMENTOS DE
INERCIAS EN UNA SUPERFICIE

Materia: ESTÁTICA PARA LA ARQUITECTURA

Grado: 3 CUATRIMESTRE

PASIÓN POR EDUCAR

Grupo: A

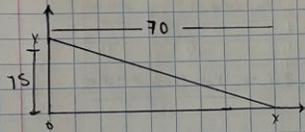


$$I_x = I_y = 0.054882^4$$

$$I_x = I_y = 0.05488 (13.4 \text{ cm})^4$$

$$= 0.05488 (32,241.7936 \text{ cm}^4)$$

$$= 1,769.429633 \text{ cm}^4$$



$$I_x = \frac{bh^3}{36}$$

$$I_y = \frac{b^3h}{36}$$

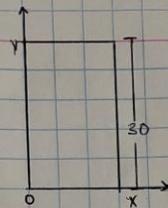
$$I_x = \frac{70 \text{ cm} (15 \text{ cm})^3}{36}$$

$$= \frac{70 \text{ cm} (3,375 \text{ cm}^3)}{36} = \frac{236,250 \text{ cm}^4}{36} = 6,562.5 \text{ cm}^4$$

$$I_y = \frac{(70 \text{ cm})^3 (15 \text{ cm})}{36}$$

$$= \frac{343,000 \text{ cm}^3 (15 \text{ cm})}{36} = \frac{5,145,000 \text{ cm}^4}{36}$$

$$= 142,916.66 \text{ cm}^4$$



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

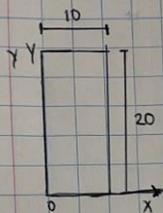
$$= \frac{17 \text{ cm} (27,000 \text{ cm}^3)}{12}$$

$$= \frac{459,000 \text{ cm}^4}{12} = 38,250 \text{ cm}^4$$

$$I_y = \frac{(17 \text{ cm})^3 30 \text{ cm}}{12}$$

$$= \frac{(4,913 \text{ cm}^3) 30 \text{ cm}}{12}$$

$$= \frac{147,390 \text{ cm}^4}{12} = 12,282.5 \text{ cm}^4$$



$$I_x = \frac{bh^3}{12}$$

$$I_y = \frac{b^3h}{12}$$

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

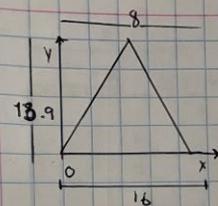
$$= \frac{10 \text{ cm} (8,000 \text{ cm}^3)}{12}$$

$$= \frac{80,000 \text{ cm}^4}{12} = 6,666.66 \text{ cm}^4$$

$$I_y = \frac{(10 \text{ cm})^3 20 \text{ cm}}{12}$$

$$= \frac{(1,000 \text{ cm}^3) 20 \text{ cm}}{12}$$

$$= \frac{20,000 \text{ cm}^4}{12} = 1,666.66 \text{ cm}^4$$



$$I_x = \frac{bh^3}{36}$$

$$I_y = \frac{b^3h}{48}$$

$$I_x = \frac{16 \text{ cm} (13.9 \text{ cm})^3}{36}$$

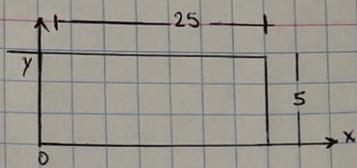
$$= \frac{16 \text{ cm} (2,685.619 \text{ cm}^3)}{36}$$

$$= \frac{4,969.904 \text{ cm}^4}{36} = 1,380.53 \text{ cm}^4$$

$$I_y = \frac{(16 \text{ cm})^3 (13.9 \text{ cm})}{48}$$

$$= \frac{4,096 \text{ cm}^3 (13.9 \text{ cm})}{48}$$

$$= \frac{56,934.4 \text{ cm}^4}{48} = 1,186.1333 \text{ cm}^4$$



$$\bar{I}_x = \frac{bh^3}{12}$$

$$\bar{I}_y = \frac{b^3h}{12}$$

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

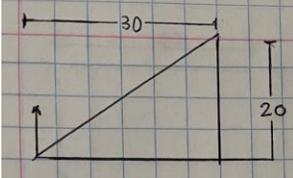
$$= \frac{25 \text{ cm} (125 \text{ cm}^3)}{12}$$

$$= \frac{3,125 \text{ cm}^4}{12} = 260.4166 \text{ cm}^4$$

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

$$= \frac{(15,625 \text{ cm}^3) 5 \text{ cm}}{12}$$

$$= \frac{78,125 \text{ cm}^4}{12} = 6510.4166 \text{ cm}^4$$



$$\bar{I}_x = \frac{bh^3}{36}$$

$$\bar{I}_y = \frac{b^3h}{36}$$

$$\bar{I}_x = \frac{30 \text{ cm} (20 \text{ cm})^3}{36}$$

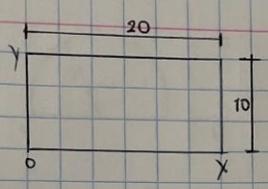
$$= \frac{30 \text{ cm} (8000 \text{ cm}^3)}{36}$$

$$= \frac{240,000 \text{ cm}^4}{36} = 6,666.66 \text{ cm}^4$$

$$\bar{I}_y = \frac{(30 \text{ cm})^3 (20 \text{ cm})}{36}$$

$$= \frac{(27,000 \text{ cm}^2) 20 \text{ cm}}{36}$$

$$= \frac{540,000 \text{ cm}^4}{36} = 15,000 \text{ cm}^4$$



$$\bar{I}_x = \frac{bh^3}{12}$$

$$\bar{I}_y = \frac{b^3h}{12}$$

$$\bar{I}_x = \frac{20 \text{ cm} (10 \text{ cm})^3}{12}$$

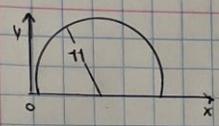
$$= \frac{20 \text{ cm} (1,000 \text{ cm}^3)}{12}$$

$$= \frac{20,000 \text{ cm}^4}{12} = 1,666.66 \text{ cm}^4$$

$$\bar{I}_y = \frac{(20 \text{ cm})^3 10 \text{ cm}}{12}$$

$$= \frac{(8,000 \text{ cm}^3) 10 \text{ cm}}{12}$$

$$= \frac{80,000 \text{ cm}^4}{12} = 6,666.66 \text{ cm}^4$$

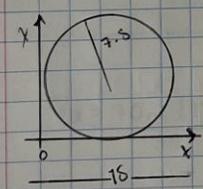


$$\bar{I}_x = 0.1098 r^4$$

$$\bar{I}_x = 0.1098 (11)^4$$

$$= 0.1098 (14,641 \text{ cm}^4)$$

$$= 1,607.5818 \text{ cm}^4$$



$$\bar{I}_x = \bar{I}_y = \frac{\pi r^4}{4}$$

$$\bar{I}_x = \bar{I}_y = \frac{3.1416 (7.5)^4}{4}$$

$$= \frac{3.1416 (3,164.0625 \text{ cm}^4)}{4}$$

$$= \frac{9,940.21875 \text{ cm}^4}{4}$$

$$= 2,485.054688 \text{ cm}^4$$