ALUMNO(A): Oliver Fernando Rodas Hernández

DOCENTE: Arq. Pedro Alberto García López

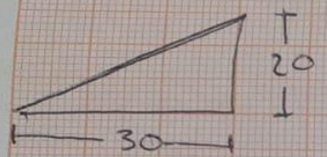
MATERIA: Estática de la Arquitectura

ACTIVIDAD: Momentos de inercia de una superficie.

CUATRIMESTRE: 3

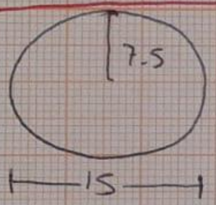
GRUPO: Arquitectura

COMITAN DE DOMINGUEZ CHIAPAS, A; 28 de julio de 2022



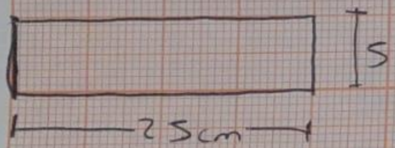
$$\bar{I}_x = \frac{bh^3}{36} = \frac{30(20)^3}{36} = \frac{240000}{36} = \underline{6,666.667\,cm^4}$$

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

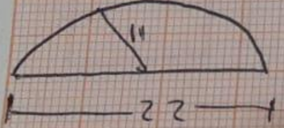


$$\bar{I}_x = \bar{I}_y = \frac{\pi R^4}{4} = \frac{3.1416(7.5)^4}{4} = \frac{9,940.218}{4}$$

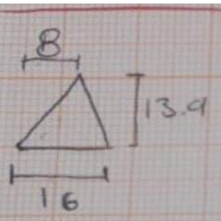
$$= \underline{2,485.054\,cm^4}$$



$$\bar{I}_x = \frac{bh^3}{12} = \frac{25cm(5cm)^3}{12} = \frac{3,125}{12} = \boxed{260.4167\,cm^4}$$

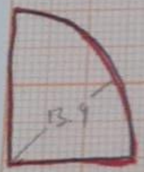


$$I_x = 0.1098R^4 = 0.1098(14,641) = \boxed{1,607.5818\,cm^4}$$

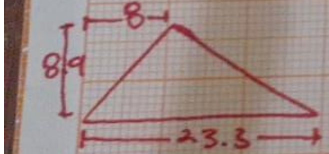


$$\bar{I}_x = \frac{16\text{cm}\,(13.9)^3}{36} = \frac{42,969.904}{36} = \underline{1,193.608\,\text{cm}^4}$$

$$\bar{I}_y = \frac{(16)^3\,(13.9)}{36} = \frac{56,934.4}{36} = \underline{1,581.51\,\text{cm}^4}$$



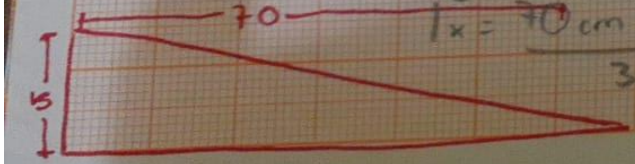
$$\bar{I}_x = \bar{I}_y = 0.05488\,(13.4) = \underline{0.7353\,\text{cm}^4}$$



$$\bar{I}_y = \frac{23.3\,(3.8\text{cm})^3}{36}\,(8\text{cm})^3 = \frac{16,475.77}{36} = 456.271\,\text{cm}^4$$

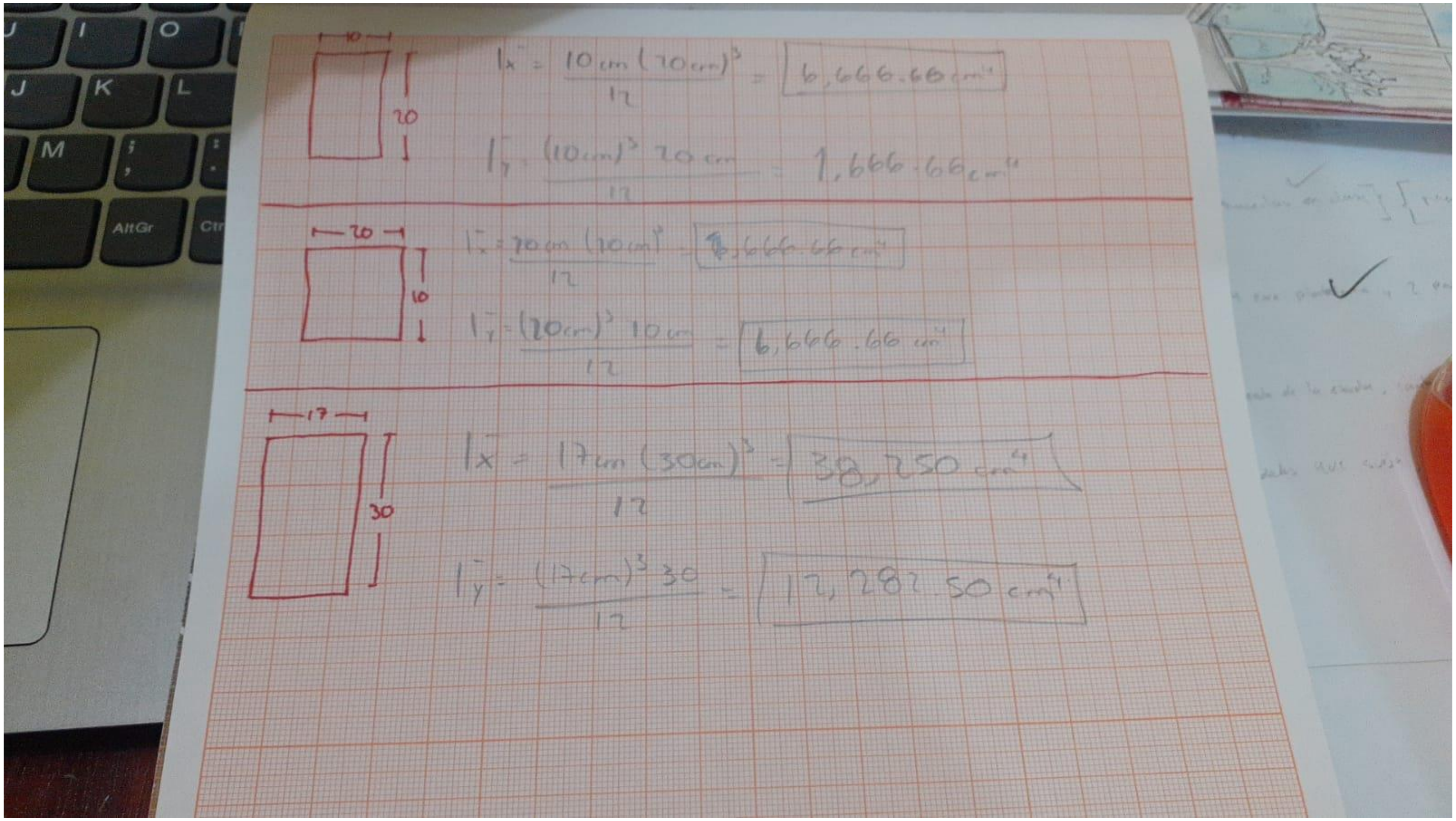
$$\bar{I}_y = \frac{23.3\,(3.8\text{cm})}{3}\,(8\text{cm}^2) - (8\text{cm} \times 23.3\text{cm}) + (23.3)^2 = \underline{12,409.921\,\text{cm}^4}$$

$$\underline{I_1 = 23,412.367\,\text{cm}^4}$$



$$\bar{I}_x = \frac{70\text{cm}\,(15\text{cm})^3}{36} = \boxed{6,562.50\,\text{cm}^4}$$

$$\bar{I}_y = \frac{(70\text{cm})^3\,15\text{cm}}{36} = \boxed{142,916.66\,\text{cm}^4}$$



10
20
20
10
17
30

$$I_{\bar{x}} = \frac{10\,cm\,(20\,cm)^3}{12} = \boxed{6,666.66\,cm^4}$$

$$I_{\bar{y}} = \frac{(10\,cm)^3\,20\,cm}{12} = 1,666.66\,cm^4$$

$$I_{\bar{x}} = \frac{20\,cm\,(10\,cm)^3}{12} = \boxed{1,666.66\,cm^4}$$

$$I_{\bar{y}} = \frac{(20\,cm)^3\,10\,cm}{12} = \boxed{6,666.66\,cm^4}$$

$$I_{\bar{x}} = \frac{17\,cm\,(30\,cm)^3}{12} = \boxed{\underline{38,250\,cm^4}}$$

$$I_{\bar{y}} = \frac{(17\,cm)^3\,30}{12} = \boxed{12,282.50\,cm^4}$$