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**Nombre del profesor: Pedro Alberto García**

**Nombre del trabajo: Resistencia de materiales de construcción (EXAMEN I)**

**Materia: Resistencia de materiales de construcción**

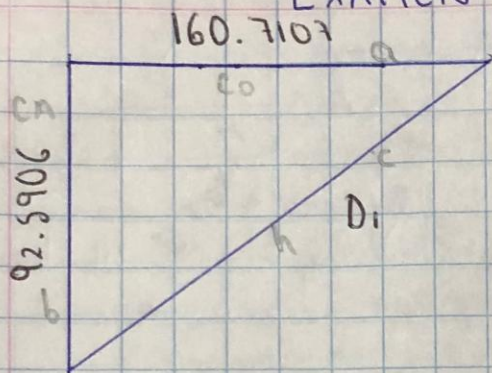
PASIÓN POR EDUCAR

**Grado: 4° cuatrimestre**

**Grupo: "A"**

Noel de Jesús López Albores  
EXAMEN I

27-Sep-2021



$$D_1 = c = \sqrt{a^2 + b^2}$$
$$c = \sqrt{(160.71)^2 + (92.6906)^2}$$
$$c = \sqrt{34400.94}$$
$$c = 185.47 \text{ N}$$

$$D_1 = \underline{\underline{185.47 \text{ N}}}$$

$$\alpha_1 = (\cos(x) = \frac{CA}{H})$$

$$\alpha_1 = \cos^{-1}(90/185.47)$$

$$\alpha_1 = 77.54^\circ$$

$$\alpha_1 = \underline{\underline{77.54^\circ}}$$

$$D_2 = a = \sqrt{c^2 - b^2}$$
$$a = \sqrt{(50)^2 - (25)^2}$$
$$a = \sqrt{1875}$$
$$a = 43.30 \text{ N}$$

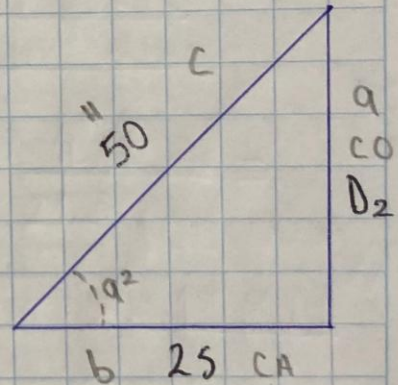
$$D_2 = \underline{\underline{43.30 \text{ N}}}$$

$$\alpha_2 = (\cos(x) = \frac{CA}{H})$$

$$\alpha_2 = \cos^{-1}(25/50)$$

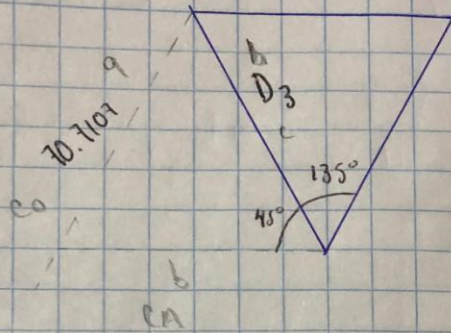
$$\alpha_2 = 60^\circ$$

$$\alpha_2 = \underline{\underline{60^\circ}}$$



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EXAMEN I

27-sep-2021



$$\alpha = 180^\circ - 135^\circ = 45^\circ$$
$$D_3 = \text{Sen}(\alpha) = \frac{c}{H}$$
$$D_3 = c / \text{sen}(\alpha) = H$$
$$H = 70.7107 / \text{sen}(45^\circ)$$
$$H = 100.00 \text{ N}$$
$$D_3 = \underline{\underline{100.00 \text{ N}}}$$

$$D_4 = b = \sqrt{c^2 - a^2}$$
$$b = \sqrt{(100.00)^2 - (70.7107)^2}$$
$$b = \sqrt{4999.99}$$
$$b = 70.71 \text{ N}$$
$$D_4 = \underline{\underline{70.71 \text{ N}}}$$

$$A_T = (185.47 + 43.30 \text{ N} + 100.00 \text{ N} + 70.71 \text{ N})$$
$$A_T = \underline{\underline{399.48 \text{ N}}}$$