



ARQ. JOSE LISANDRO LOPEZ ALFARO

NOMBRE DEL TEMA: REACCIONES EN ELEMENTOS COMBINADOS

PARCIAL: 3

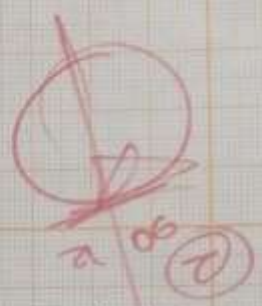
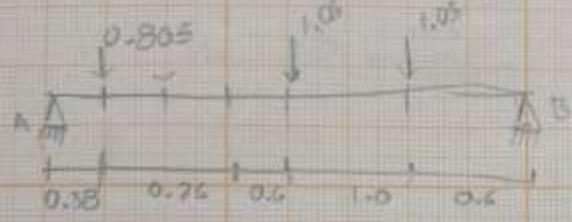
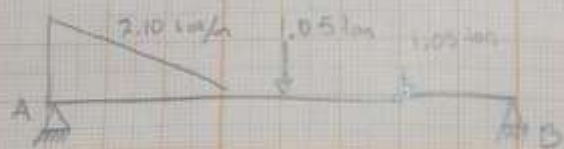
NOMBRE DE LA MATERIA: ESTÉTICA PARA LA ARQUITECTURA

ARQ. PEDRO ALBERTO GARCIA LOPEZ

NOMBRE DE LA LICENCIATURA: ARQUITECTURA

CUATRIMESTRE: III

$$\frac{w \cdot L}{8} =$$

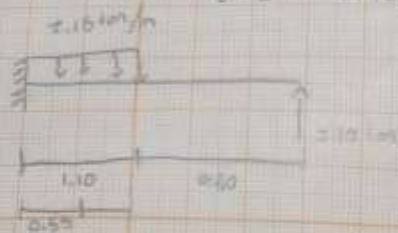


$$M_A = (-1.2075 \cdot 0.38) + (-1.05 \cdot 1.75) + (-1.05 \cdot 2.76)$$

$$M_A = 0.45 - 1.83 - 2.88$$

$$M_A = -5.1675 \text{ ton}\cdot\text{m}$$

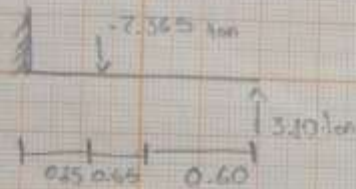
$$w \cdot L = 7.15 \cdot 1.10 = 7.865 \text{ ton}$$



$$M_A = (-7.865 \text{ ton} \cdot 0.55) + (3.10 \text{ ton} \cdot 1.7) = 0$$

$$M_A = -1.380 + 5.27$$

$$M_A = 3.97 \text{ ton} \cdot \text{m}$$

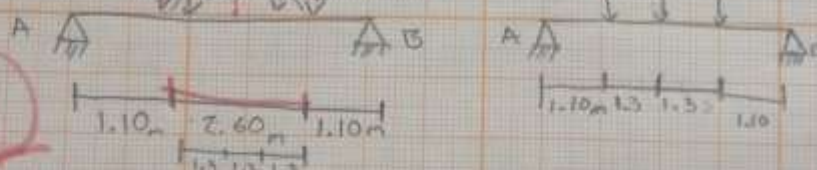


$$\frac{w \cdot L}{2} = \frac{4.10 \text{ ton}}{2} = 2.05 \text{ ton}$$

$$-0.98 \text{ ton} \cdot 1.10 \text{ m} = -1.078 \text{ ton} \cdot \text{m}$$

$$-5.33 \text{ ton} \cdot 2.4 \text{ m} = -12.792 \text{ ton} \cdot \text{m}$$

$$-0.32 \text{ ton} \cdot 1.3 \text{ m} = -0.416 \text{ ton} \cdot \text{m}$$



$$M_A = (-0.98 \text{ ton} \cdot 1.10 \text{ m}) + (-5.33 \text{ ton} \cdot 2.4) + (-0.32 \cdot 1.3) = 0$$

$$M_A = -1.078 - 12.792 - 0.416 + (R_B \cdot 4.8)$$

$$(R_B \cdot 4.8)$$

$$M_A = -14.785$$

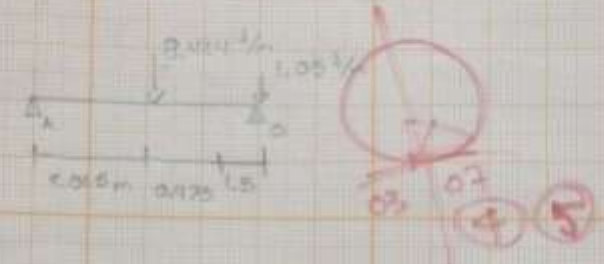
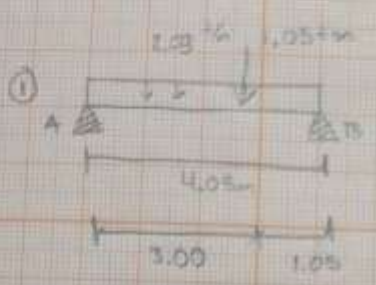
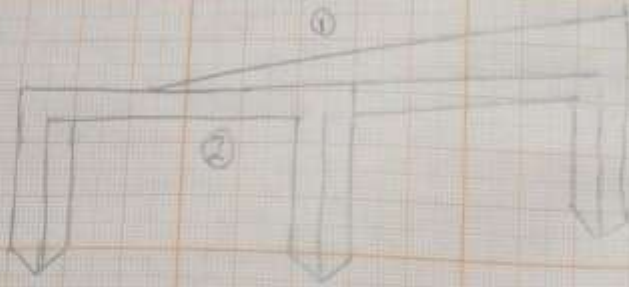
$$M_A = \frac{14.785}{4.8} = 3.08 \text{ ton}$$

→ R.B

$$R_A = -0.98 - 5.33 - 0.32 + 3.08 = -3.55 \text{ ton}$$

→ R.A

$$\text{Comprobacion } 3.75 - 0.98 - 5.33 - 0.32 + 3.08 = 0$$



$$M_A = (-8.424 \cdot 2.026) + (-1.05 \cdot 3) + (R_B \cdot 4.05)$$

$$R_A = -17.05 - 3.15 + (R_B \cdot 4.05)$$

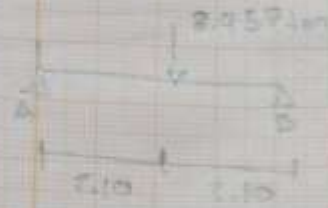
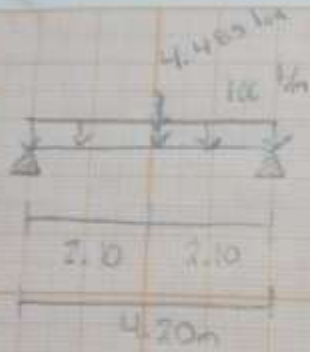
$$R_A = -20.2 + (R_B \cdot 4.05)$$

$$R_B = \frac{20.2}{4.05} = 4.987 \text{ ton}$$

$$R_A = -8.424 - 1.05 + 4.987 = -4.487 \text{ ton}$$

$$R_A = 4.487 - 8.424 - 1.05 + 4.987 = 0$$

②



$$R.A = (-8.937 - 2.10) + (R.B. \cdot 4.20)$$

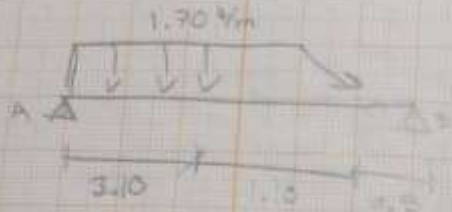
$$R.A = -11.037 + (R.B. \cdot 4.20)$$

$$R.B = \frac{11.037}{4.20} = 2.628 \text{ ton}$$

$$R.A = -8.937 + 2.628 \cdot 4.20 = -4.469 \text{ ton}$$

$$\text{Comprobacion} = 4.469 - 8.937 + 4.469 = 0$$

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$$\sin \theta = \frac{CO}{CA} \quad CO = \sin \theta \cdot CA$$

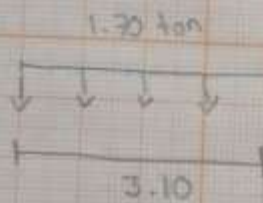
$$\sin 35^\circ = \frac{CO}{4.7} \quad CO = 2.7077 \text{ m}$$

$$y = 0.5259 \text{ ton}$$



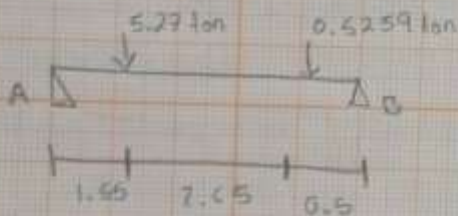
$$\cos \theta = \frac{CA}{CA} \quad x = CA = \frac{CO}{\cos 35^\circ} = 4.7 \text{ m}$$

$$x = 0.7511 \text{ ton}$$



$$W \cdot L = 1.70 \cdot 3.10 = 5.27 \text{ ton}$$

$$UG = \frac{L}{2} = \frac{3.10}{2} = 1.55 \text{ m}$$



$$M_A = (5.27 \text{ ton} \cdot 1.55) + (0.5259 \cdot 4.2) - (R_B \cdot 4.7)$$

$$8.1685 \text{ ton} + 2.20878 \text{ ton} + R_B \cdot 4.7$$

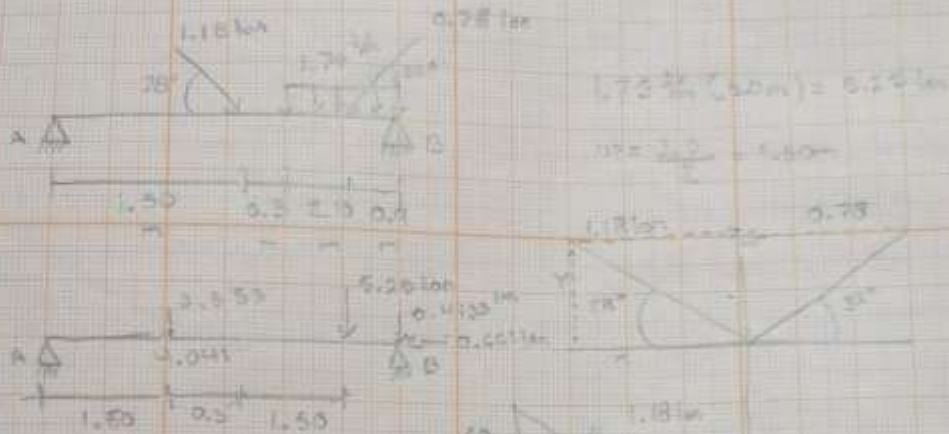
$$R_B = 10.37728 \text{ ton} \cdot \text{m} / 4.7 \text{ m}$$

$$R_B = 2.2079 \text{ ton}$$

$$R_A = -5.27 - 0.7802 + 2.2079 = 3.8423 \text{ ton}$$

Comprobacion =

11/11/17



Fox =

$$1.041 - 0.661 = 0.38 \text{ ton}$$

Foy =

$$0.553 - 0.4133 = 0.13$$

$$M_o = (0.553 \cdot 1.50) + (-5.25 \cdot 3.3) + (0.4133 \cdot 4.8) + (R.B. \cdot 4.8)$$

$$-0.82 - 17.325 - 1.617 + R.B. \cdot 4.8$$

$$-19.766 + R.B. \cdot 4.8$$

$$R.B. = \frac{19.766}{4.8} = 4.1179 \text{ ton}$$

$$-0.553 - 5.25 - 0.413 + 4.1179 = -2.098 \text{ ton}$$

$$R.A. = 2.098 \text{ ton}$$

$$\cos \theta = \frac{CO}{H}$$

$$CA = H(\cos \theta)$$

$$CA = 0.78 \cdot \cos 32^\circ$$

$$CA = 0.661 \text{ ton}$$

$$\sin \theta = \frac{CO}{H}$$

$$CO = H \cdot \sin \theta$$

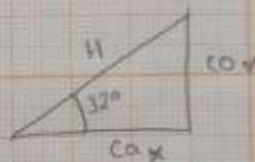
$$CO = 1.18 \cdot \sin 28^\circ$$

$$CO = 0.553 \text{ ton}$$

$$\cos \theta = \frac{CA}{H}$$

$$CA = H(\cos \theta)$$

$$CA = 1.18 \text{ ton} (\cos 28^\circ) = 4.041 \text{ ton}$$



$$\sin \theta = \frac{CO}{H}$$

$$CO = H(\sin \theta)$$

$$CO = 0.78 \cdot \sin 32^\circ$$

$$CO = 0.4133 \text{ ton}$$