

Maquetas

Nombre del Alumno:

José Trinidad López Domínguez

Nombre del tema:

ESTÁTICA

Parcial: 1°

Nombre de la Materia:

ESTÁTICA PARA LA ARQUITECTURA

Nombre del profesor:

Pedro Alberto García López

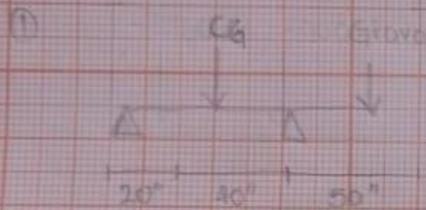
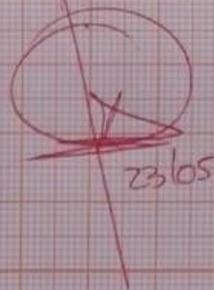
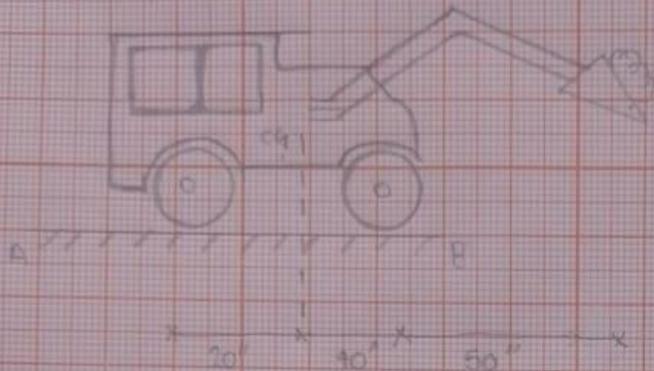
Nombre de la Licenciatura: Arquitectura

Cuatrimestre: 3°

Comitán de Domínguez, Chiapas a 24 de mayo de 2024

23 de mayo 2024

Un tractor de 2,100 Libras se utiliza para levantar 900 Libras de grava, determine la relación entre la llanta trasera A y llanta trasera B.



① $\sum F_v = 0$
 $T_A = -2100 \text{ LB} - 900 \text{ LB} + A_{pB} = 0$
 $T_A = -3000 + A_{pB} = 0$
 $T_A + T_B = 3000 \text{ LB}$

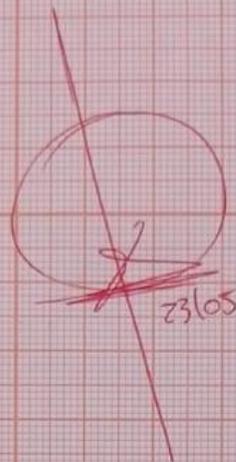
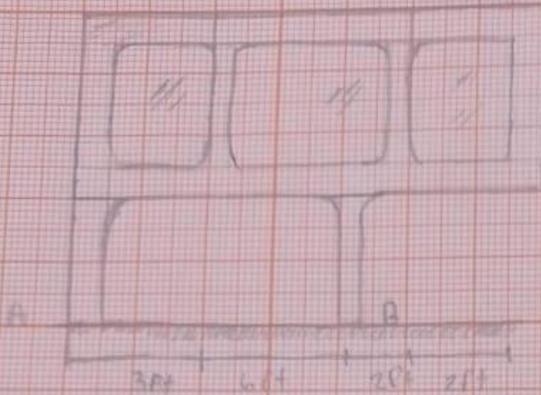
② $\sum M = 0$
 $(-2100 \cdot 20 \text{ m}) + (A_{pB} \cdot 60 \text{ m}) + (-900 \cdot 110 \text{ m}) = 0$
 $= (-42000) + (A_{pB} \cdot 60) + (-99000) = 0$
 $= (-141000) + A_{pB} \cdot 60$
 $A_{pB} = \frac{+141000 \text{ LB}}{60} = \frac{+2350 \text{ LB}}{2} = 1175 \text{ LB}$

③ A_{pA}
 $A_{pA} + 2350 \text{ LB} = 3000 \text{ LB}$
 $A_{pA} = 3000 \text{ LB} - 2350 \text{ LB}$
 $A_{pA} = \frac{650 \text{ LB}}{2} = 325 \text{ LB}$

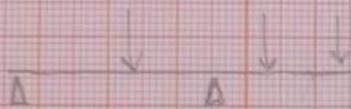
④ $\sum F_y$
 $\sum F_y = 650 \text{ LB} - 2100 \text{ LB} - 900 \text{ LB} + 2350 \text{ LB}$
 $= 650 \text{ LB} + 2350 = 3000$
 $2100 + 900 = 3000 \text{ LB} - 3000 \text{ LB} = 0$
 $\sum F_y = 0$

23 de Mayo 2024

-15 Kips -6 kips -6 kips



1



2) $\sum F_y = 0$

$$A_{oB} - 15 \text{ Kips} - 6 \text{ kips} - 6 \text{ kips} + A_{oB} = 0$$

$$A_{oB} = -27 \text{ Kips} + A_{oB} = 0$$

$$A_{oA} + A_{oB} = 27 \text{ Kips}$$

3) $\sum M = 0$

$$(-15 \text{ kips} \cdot 3 \text{ ft}) + (A_{oB} \cdot 9 \text{ ft}) + (-6 \text{ kips} \cdot 11 \text{ ft}) + (-6 \text{ kips} \cdot 13 \text{ ft}) = 0$$

$$= (-45 \text{ Kips} \cdot \text{ft}) + (A_{oB} \cdot 9 \text{ ft}) + (-66 \text{ Kips} \cdot \text{ft}) + (-78 \text{ Kips} \cdot \text{ft}) = 0$$

$$= -189 \text{ Kips} \cdot \text{ft} + A_{oB} \cdot 9 \text{ ft}$$

$$A_{oB} = \frac{+189 \text{ Kips} \cdot \text{ft}}{9 \text{ ft}} = 21 \text{ Kips}$$

4) A_{oA}

$$A_{oA} + 21 \text{ Kips} = 27 \text{ Kips}$$

$$A_{oA} = 27 \text{ Kips} - 21 \text{ Kips}$$

$$A_{oA} = 6 \text{ Kips}$$

5) $\sum F_y$

$$\sum F_y = 6 \text{ Kips} - 15 \text{ Kips} - 6 \text{ kips} - 6 \text{ Kips} + 21 \text{ kips}$$

$$\sum F_y = -15 - 6 - 6 = -27$$

$$\sum F_y = 6 + 21 = 27 - 27 = 0$$

$$\sum F_y = 0$$