

Mi Universidad

ERVIN ALTAMIRANO JIMENEZ

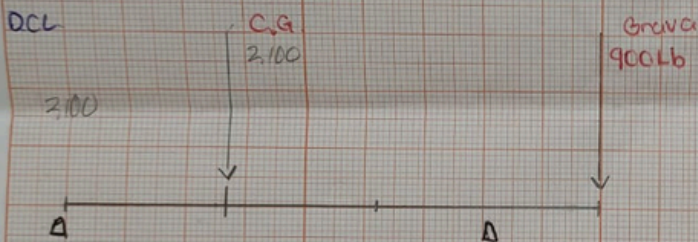
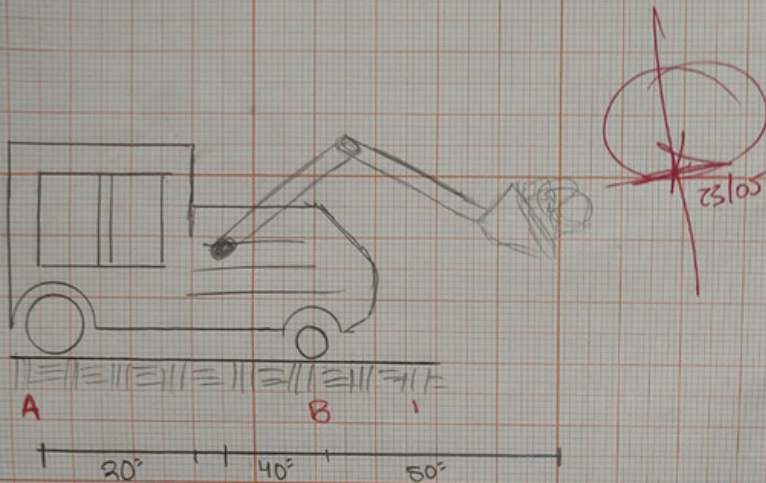
MATERIA: ESTATICA PARA LA ARQUITECTURA

PROFESOR: ARQ. PEDRO GARCIA LOPEZ

CUATRIMESTRE: 3RO UNIDAD 1

EJERCICIOS

1.- Tractor de 2,100 lb se utiliza para levantar 900 lb de grava. Determina la relación entre la llanta trasera A y la llanta delantera B.



$$\begin{aligned} \textcircled{2} \sum F_y &= 0 \\ \cancel{AA} - 2,100 \text{ lb} - 900 \text{ lb} + TB & \\ TA &= 3,000 \text{ lb} \end{aligned}$$

$$\begin{aligned} \textcircled{3} \sum \mathcal{M} &= 0 \\ (2,100 \cdot 20) + (Ab \cdot 60) + (900 \cdot 110) & \\ -42,000 + (Ab \cdot 60) + 99,000 & \\ 142,000 + (Ab \cdot 60) & \\ Ab &= \frac{142,000}{60} = 2,350 \quad \frac{2,350}{2} = 1,175 \text{ lb} \end{aligned}$$

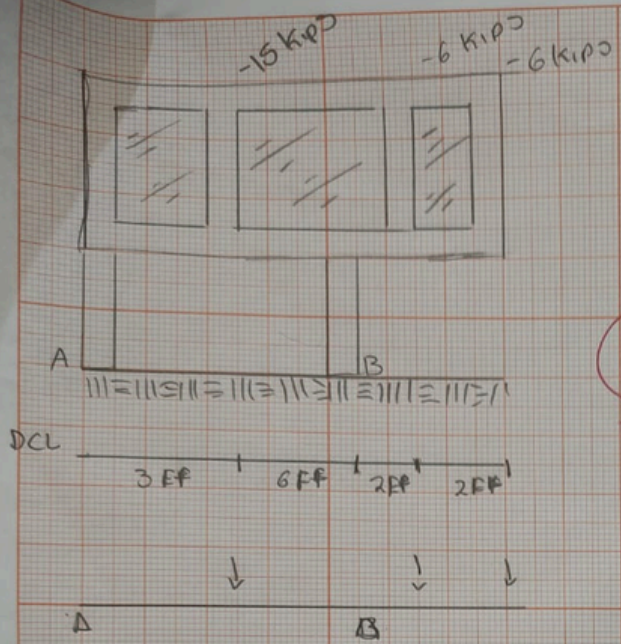
$$AA + AB = 3,000 \text{ lb} =$$

$$AA + 2,350 = 3,000$$

$$AA = 3,000 - 2,350$$

$$AA = \frac{650 \text{ lb}}{2} = 325 \text{ lb}$$

$$\textcircled{4} 650 \text{ lb} - 2,100 \text{ lb} - 900 \text{ lb} + 2,350 \text{ lb} = 0$$



$$E_{FV} = 0$$

$$AA = -15 \text{ kips} - 6 \text{ kips} - 6 \text{ kips} + Ab$$

$$AA = 27 \text{ kips} + Ab$$

$$E_m = 0$$

$$(-15 \text{ kips} \cdot 3 \text{ ft}) + (Ab \cdot 9 \text{ ft}) + (-6 \text{ kips} \cdot 11 \text{ ft}) + (6 \text{ kips} \cdot 13)$$

$$-45 \text{ kips} + (Ab \cdot 9 \text{ ft}) - 66 \text{ kips} - 78$$

$$-189 \text{ kips} = Ab \cdot 9 \text{ ft}$$

$$Ab = \frac{189}{9} = 21 \text{ kips}$$

$$AA + Ab = 27 \text{ kips}$$

$$AA + 21 \text{ kips} = 27 \text{ kips}$$

$$AA = 27 \text{ kips} - 21 \text{ kips}$$

$$AA = 6 \text{ kips}$$

$$6 \text{ kips} - 15 \text{ kips} - 6 \text{ kips} - 6 \text{ kips} + 21 \text{ kips} = 0$$