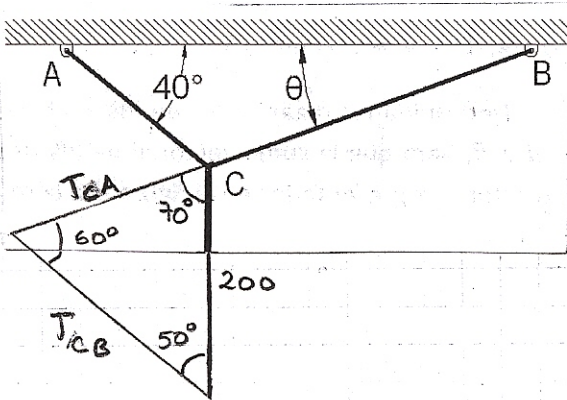


1.-



$$\frac{200}{\sin 60^\circ} = \frac{T_{CA}}{\sin 70^\circ} = \frac{T_{CB}}{\sin 50^\circ}$$

$$\underline{T_{CA} = 217.01 \text{ N} ; T_{CB} = 176.91 \text{ N}}$$

2.-  $\vec{F}_1 = 250 \hat{i} \text{ [lb]}$

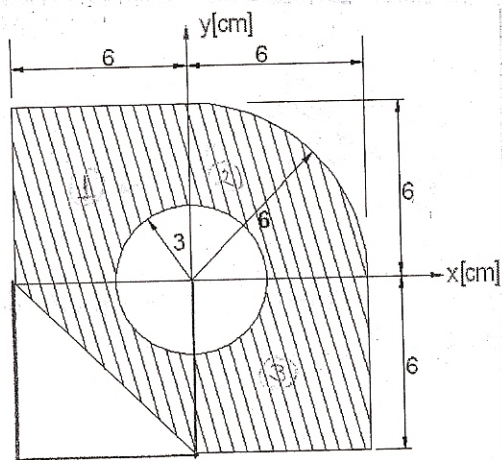
$\vec{F}_2 = -320 \hat{i} + 240 \hat{j} \text{ [lb]}$

$\vec{F}_3 = -300 \hat{i} \text{ [lb]}$

$\vec{R} = -370 \hat{i} + 240 \hat{j} \text{ [lb]}$

$\vec{M}_E = 5150 \hat{k} \text{ [lb}\cdot\text{in]} = 429.17 \text{ [lb}\cdot\text{ft]}$

3.-

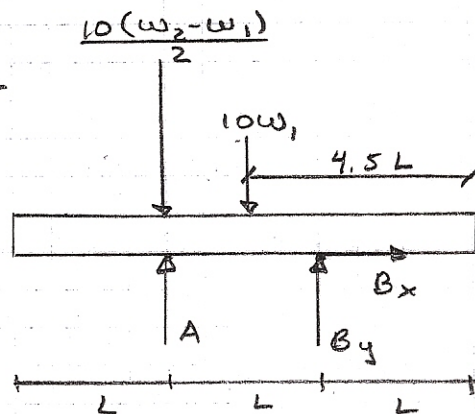


$$\bar{x} = \frac{-3(36) + 3(36) + 0(-28.27) - 2(18) + 2.55(28.27)}{36 + 36 - 28.27 + 18 + 28.27}$$

$$\bar{y} = \frac{3(36) - 3(36) + 0(-28.27) - 2(18) + 2.55(28.27)}{90}$$

$\underline{\bar{x} = 0.40 \text{ cm} , \bar{y} = 0.40 \text{ cm}}$

4.-



$$\sum F_x = B_x = 0 \Rightarrow \underline{B_x = 0}$$

$$\sum F_y = A + B_y - 5w_2 - 5w_1 = 0$$

Como  $A = 2B_y$  y  $B_y = 100 \text{ N}$

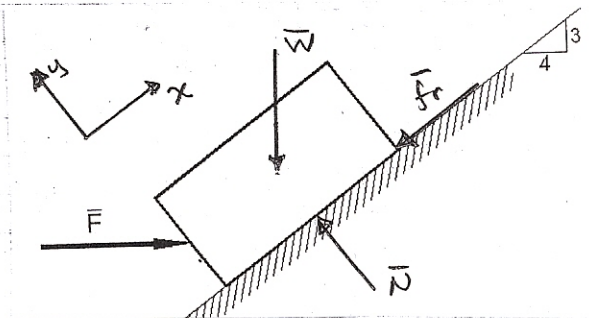
$$\sum F_y = 3B_y - 5w_2 - 5w_1 = 0$$

$$\sum M_A = -0.5L(10w_1) + LB_y = 0$$

$$\Rightarrow \underline{w_1 = 20 \text{ N/m}} \Rightarrow \underline{w_2 = 40 \text{ N/m}}$$

$$\underline{w_2 = 2w_1}$$

5.-



$$\sum F_x = \frac{4}{5}F - \frac{3}{5}W - f_r = 0$$

$$\sum F_y = N - \frac{3}{5}F - \frac{4}{5}W = 0$$

$$\Rightarrow N = 68 \text{ y } f_r = \mu N = 24 \text{ [N]}$$

$$\underline{\mu = 0.35}$$