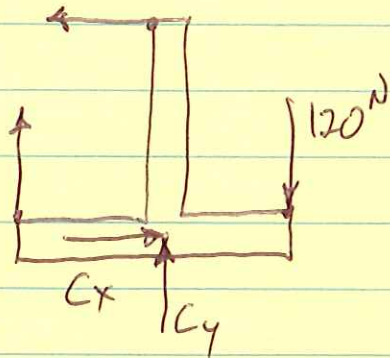


PROB. 4.29

FIND T , \vec{c}

FBD



$$\sum F_x = 0: C_x - T = 0, C_x = T$$

$$\sum F_y = 0: C_y + T - 120 = 0$$

$$C_y = 120 - T$$

$$\sum M_c = 0 (+):$$

$$-(100 \text{ mm})T + (250)T - (100)(120 \text{ N}) = 0$$

$$150T = 12,000 \Rightarrow \underline{T = 80 \text{ N}}$$

$$C_x = T = 80 \text{ N}, C_y = 120 - T = 120 - 80 = 40 \text{ N}$$

$$\vec{c} = (80)\hat{i} + (40)\hat{j} \text{ N}$$

$$|\vec{c}| = \sqrt{80^2 + 40^2} = \underline{89.4 \text{ N}}$$

$$\theta = \text{TAN}^{-1}\left(\frac{40}{80}\right) = \underline{26.6^\circ}$$