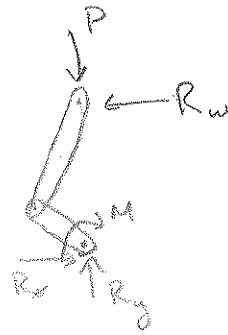
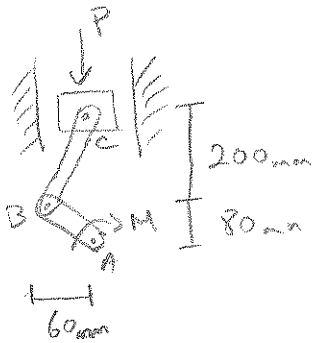


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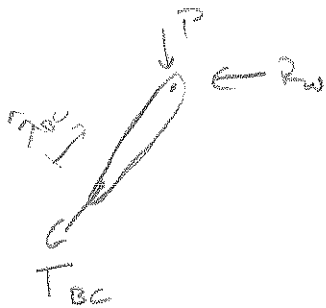
Assume frictionless walls

$$\sum M_A = 280 \text{ mm} \cdot g \times (-R_w) \hat{c} - M \hat{e} = 0$$

a)

$$280 R_w \cdot \text{mm} = M = 1500 \text{ N} \cdot \text{m}$$

$$R_w = \frac{1500 \text{ N} \cdot \text{m}}{0.280 \text{ m}} = 5357.142 \text{ N}$$



$$\sum \vec{F} = -T_{BC} \hat{\lambda}_{BC} - R_w \hat{c} - P \hat{g} = \vec{0}$$

$$T_{BC} \hat{\lambda}_{BC} = -R_w \hat{c} - P \hat{g}$$

$$= T_{BC} (60 \text{ mm} \hat{c} + 200 \text{ mm} \hat{g})$$

$$\cdot \frac{1}{\sqrt{(60)^2 + (200)^2} \text{ mm}}$$

$$= T_{BC} (0.287 \hat{c} + 0.957 \hat{g})$$

$$\left\{ \sum \vec{F} \right\} \cdot \hat{c} \Rightarrow T_{BC} (0.287) = -R_w = -5357.142 \text{ N}$$

$$T_{BC} = -18.643 \text{ kN}$$

$$\left\{ \sum \vec{F} \right\} \cdot \hat{g} \Rightarrow 0.957 T_{BC} = -P$$

$$P = 17.86 \text{ kN}$$

(cont'd)

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$$b) \sigma_{bc} = \frac{T_{bc}}{A} = \frac{-18.643 \text{ kN}}{450 \text{ mm}^2} = \boxed{-41.4 \text{ MPa}}$$

41.4 MPa compression