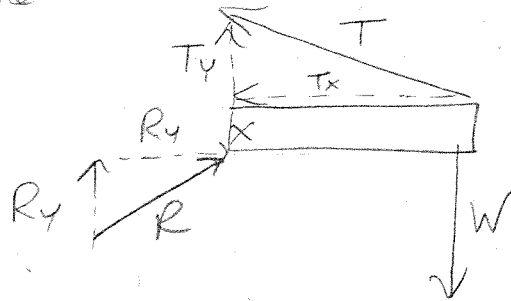


$$W_{\text{Beam}} = 0 \text{ N}$$

$$W_{\text{Light}} = m \cdot g = (20 \text{ kg}) (9.8 \text{ m/s}^2) = 196 \text{ N}$$

$$\theta = 30^\circ$$

$$r_T = r_W \text{ (both are @ same position)}$$

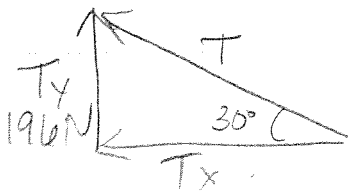


$$\Sigma F: T_T + T_R = T_W$$

$$T_Y \cdot r_T + R \cdot 0 = W \cdot r_W$$

$$T_Y \cdot r_T = (196 \text{ N}) r_W$$

$$T_Y = 196 \text{ N}$$



$$T_Y = T \cdot \sin \theta$$

$$196 \text{ N} = T \cdot \sin 30^\circ$$

$$\boxed{T = 392 \text{ N}}$$