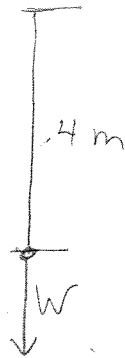


P #4

Ch 8 - pg 245

$$W = m \cdot g = (10 \text{ kg}) (9.8 \text{ m/s}^2) = 98 \text{ N}$$

Position 1:

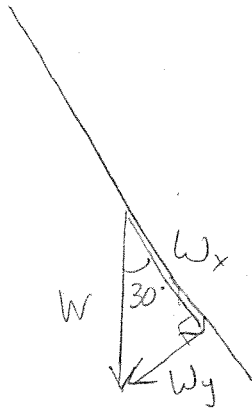


W is parallel to r

$$\tau = 0 \text{ N}\cdot\text{m}$$

Position 2:

$$r = 0.4 \text{ m}$$



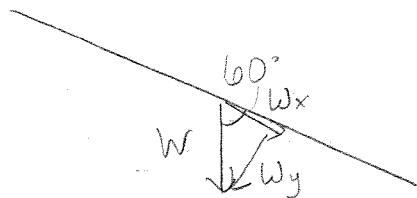
$$\begin{aligned} W_y &= W \cdot \sin \theta \\ &= (98 \text{ N}) (\sin 30^\circ) \\ &= 49 \text{ N} \end{aligned}$$

$$\begin{aligned} \tau &= W_y \cdot r \\ &= (49 \text{ N}) \cdot (0.4 \text{ m}) \end{aligned}$$

$$\tau = 19.6 \text{ N}\cdot\text{m}$$

Position 3:

$$r = 0.4 \text{ m}$$



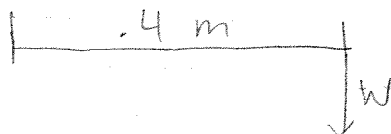
$$\begin{aligned} W_y &= W \cdot \sin \theta \\ &= (98 \text{ N}) (\sin 60^\circ) \\ &= 84.9 \text{ N} \end{aligned}$$

$$\begin{aligned} \tau &= W_y \cdot r \\ &= (84.9 \text{ N}) \cdot (0.4 \text{ m}) \end{aligned}$$

$$\tau = 33.9 \text{ N}\cdot\text{m}$$

Position 4:

$$r = 0.4 \text{ m}$$



$$\begin{aligned} \tau &= W \cdot r \\ &= (98 \text{ N}) \cdot (0.4 \text{ m}) \end{aligned}$$