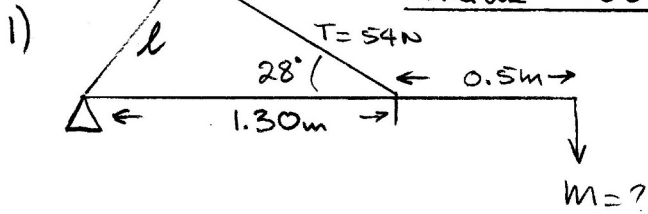


TORQUE WSheet # 3 Solutions



$$\Sigma T = 0$$

$$\Sigma T_{cw} = \Sigma T_{ccw}$$

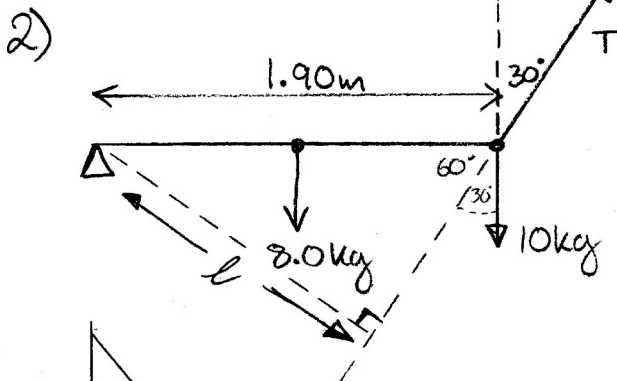
$$T \times l = (m \times g) \times d_2$$

$$54 \text{ N} \times d_1 \sin 28^\circ = M (9.80) (d_2)$$

$$54 \times (1.30 \sin 28^\circ) = M (9.80) (1.8 \text{ m})$$

$$32.956 = 17.64 M$$

$$M = 1.87 \text{ kg}$$



$$T = ? \quad \Sigma T = 0$$

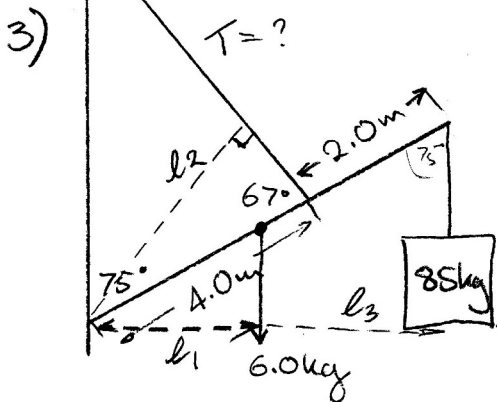
$$\Sigma T_{cw} = \Sigma T_{ccw}$$

$$(8)(9.8) \left(\frac{1.90}{2}\right) + (10)(9.8)(1.90 \text{ m}) = T \times (1.90 \sin 60^\circ)$$

$$260.68 = 1.645 T$$

$$\therefore T = 158.42 \text{ N}$$

$$T \approx 160 \text{ N}$$



$$\Sigma T = 0$$

$$\Sigma T_{cw} = \Sigma T_{ccw}$$

$$(85)(9.8)(6 \sin 75^\circ) + (6)(9.8)(4 \sin 75^\circ) = T (4 \sin 67^\circ)$$

$$T = 1372.856 \text{ N}$$

$$T \approx 1.4 \times 10^3 \text{ N}$$