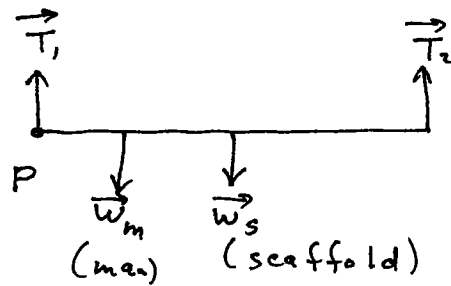


Exercise 9-7

FBD for scaffold:



$$\sum \tau = 0, \text{ about } P \quad \curvearrowright +$$

$$\therefore (T_1)(0) - (W_m)(1.00 \text{ m}) - (W_s)(2.00 \text{ m}) + (T_2)(4.00 \text{ m}) = 0$$

$$\begin{aligned} \therefore T_2 &= \frac{W_m + 2.00 W_s}{4.00} \\ &= \frac{(100)(9.80) + 2.00(750)}{4.00} \\ &= 620 \text{ N} \quad (620.0 \text{ N}) \end{aligned}$$

$$\uparrow +y \quad \sum F_y = m a_y = 0$$

$$\therefore T_1 + T_2 - W_m - W_s = 0$$

$$\therefore T_1 = W_m + W_s - T_2$$

$$= (100 \text{ kg})(9.80 \text{ m/s}^2) + (750 \text{ N}) - (620 \text{ N})$$

$$= 1.11 \times 10^3 \text{ N}$$