

Chapter 1

1-1*

From a free-body diagram of the forearm,
the equilibrium equations give

$$\uparrow \Sigma F_y = 0: \quad T - F - W - 20 = 0$$

$$\curvearrowright \Sigma M_F = 0: \quad 1.5T - 5.5W - 11.5(20) = 0$$

$$T = 3.667W + 153.33 \text{ lb} \quad \text{Ans.}$$

$$F = 2.667W + 133.33 \text{ lb} \quad \text{Ans.}$$

