

$$m_1 = 5.00 \text{ kg}$$

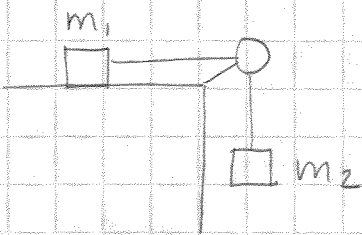
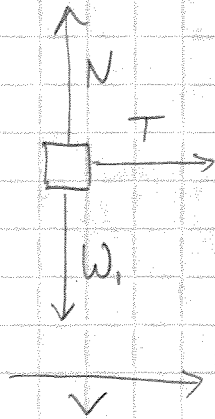
$$m_2 = 10.0 \text{ kg}$$

$$W_1 = 49.0 \text{ N}$$

$$W_2 = 98.0 \text{ N}$$

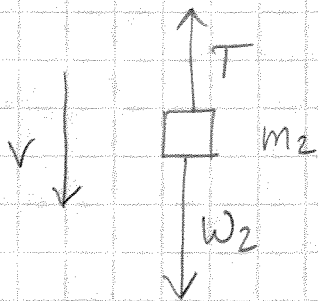
$$a = ?$$

$$T = ?$$

For m_1 :

$$F_{\text{NET}} = T = m_1 \cdot a$$

$$\Rightarrow T = (5.00 \text{ kg}) \cdot a$$

For m_2 :

$$F_{\text{NET}} = W_2 - T = m_2 \cdot a$$

$$\Rightarrow 98.0 \text{ N} - T = (10.0 \text{ kg}) \cdot a$$

Substituting ... $98.0 \text{ N} - [(5.00 \text{ kg}) \cdot a] = (10.0 \text{ kg}) \cdot a$

$$a = 6.53 \text{ m/s}^2$$

Substituting ... $T = (5.00 \text{ kg})(6.53 \text{ m/s}^2)$

$$T = 32.7 \text{ N}$$