

$$3. W_g = ? \quad F_g = 19.6 \text{ N} \quad \Delta r = 8.5 \text{ m}$$

$$\phi =$$

$$W = (F)(\Delta r) \cos \phi$$

$$= (19.6)(8.5) \cos 0^\circ$$

$$W_g = 167 \text{ J}$$

$$b) \Delta U_g = ? \quad m = 2 \text{ kg}$$

$$\Delta y = -8.5 \text{ m}$$

$$\Delta U_g = mg(\Delta y)$$

$$= (2)(9.8)(-8.5)$$

$$\Delta U_g = -167 \text{ J}$$

$$c) U_{g_0} = ? \quad m = 2 \text{ kg} \quad y_0 = 10 \text{ m}$$

$$U_g = mgy$$

$$= 2(9.8)(10)$$

$$U_g = 196 \text{ J}$$

$$d) U_{g_f} = ?$$

$$U_g = (2)(9.8)(1.5)$$

$$U_{g_f} = 29.4 \text{ J}$$