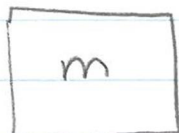
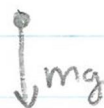


10-7)

$$V_i = 0, y = 30.2 \text{ m}$$



$$m = 1.25 \times 10^3 \text{ kg}$$



$$V_f = ?, y = 0 \text{ m}$$

$$\begin{aligned} \text{a) } W_g &= mg \cdot \Delta y \\ &= mg \Delta y \quad \leftarrow \\ W_g &= (1.25 \times 10^3)(9.8)(30.2) \end{aligned}$$

$$W_g = 3.70 \times 10^5 \text{ J}$$

$$W = \Delta K$$

$$W_g = K_f - K_i^0$$

$$3.70 \times 10^5 = K_f$$

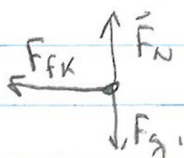
all gravitational potential energy is converted to kinetic energy.

$$\text{b) } W_f = \Delta K$$

$$\vec{F}_f \cdot \Delta x = K_f - K_i$$

$$-\mu_k F_n \Delta x = -K_i$$

$$\mu_k mg \Delta x = K_i$$



$$K_i = 3.7 \times 10^5 \text{ J}$$

$$K_f = 0$$



$$\Delta x = 21.0 \text{ m}$$

$$\mu_k = \frac{K_i}{mg \Delta x} = \frac{3.70 \times 10^5}{(1.25 \times 10^3)(9.8)(21.0)}$$

$$\mu_k = 1.44$$