

P #25

Ch 11 - pg 354

$$\begin{aligned}m_{\text{skier}} &= 75.0 \text{ kg} \\g &= 9.8 \text{ m/s}^2 \\v &= .20\end{aligned}$$

$$\begin{aligned}m_{\text{snow}} &= 1.0 \text{ kg} \\L_f &= 3.33 \times 10^5 \text{ J/kg}\end{aligned}$$

$$W = Q_{\text{melt}}$$

$$F_f \cdot d = m \cdot L_f$$

$$(v \cdot m_{\text{skier}} \cdot g) \cdot d = m_{\text{snow}} \cdot L_f$$

$$(.20 \times 75 \text{ kg} \times 9.8 \text{ m/s}^2) \cdot d = (1.0 \text{ kg}) \cdot (3.33 \times 10^5 \text{ J/kg})$$

$$147 \cdot d = (3.33 \times 10^5 \text{ J/kg})$$

$$d = 2300 \text{ m}$$