

$$a) \quad m = 1.5 \text{ kg}$$

$$c_{\text{cu}} = 387 \text{ J/kg}^\circ\text{C}$$

$$v = 3.0 \text{ m/s}$$

85% of KE is transferred into Q

$$85\% \cdot KE = Q$$

$$(.85) \cdot \frac{1}{2} \cdot m \cdot v^2 = m \cdot c \cdot \Delta T$$

$$(.85) \cdot \frac{1}{2} \cdot (1.5 \text{ kg}) \cdot (3.0 \text{ m/s})^2 = (1.5 \text{ kg})(387 \text{ J/kg}^\circ\text{C}) \Delta T$$

$$\Delta T = .0099^\circ\text{C}$$