

$$m = 8.0 \text{ g} = .008 \text{ kg}$$

$$v_o = 800 \text{ m/s}$$

$$v_f = 700 \text{ m/s}$$

$$t = 1.0 \times 10^{-4} \text{ sec}$$

$$a) \quad p_1 + \Delta p = p_2$$

$$(.008 \text{ kg}) \cdot (800 \text{ m/s}) + \Delta p = (.008 \text{ kg}) \cdot (700 \text{ m/s})$$

$$\Delta p = -.8 \text{ kg} \cdot \text{m/s}$$

$$b) \quad KE_1 + W = KE_2$$

$$\frac{1}{2} \cdot (.008 \text{ kg}) \cdot (800 \text{ m/s})^2 + W = \frac{1}{2} \cdot (.008 \text{ kg}) \cdot (700 \text{ m/s})^2$$

$$W = -600 \text{ J}$$

$$c) \quad \Delta p = F \cdot t$$

$$-.8 \text{ kg} \cdot \text{m/s} = F_{\text{net}} \cdot (1.0 \times 10^{-4} \text{ sec})$$

$$F_{\text{net}} = -8000 \text{ N}$$