

$$18. |\Delta p| = ? \quad m = 0.7 \text{ kg} \quad \vec{v}_i = 5 \text{ m/s} \quad \vec{v}_f = -2 \text{ m/s}$$

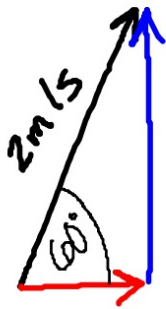
$$\Delta \vec{p} = \vec{p}_f - \vec{p}_i = m(v_f - v_i)$$

$$= 0.7(-2 - 5)$$

$$= -4.9 \text{ kg m/s}$$

$$|\Delta p| = 4.9 \text{ kg m/s}$$

22.



$$V_{0x} = 1 \text{ m/s}$$

$$V_{0y} = 1.73 \text{ m/s}$$

$$V_{fx} = 1 \text{ m/s}$$

$$V_{fy} = -1.73 \text{ m/s}$$

$$\therefore \theta_f = \text{same as } \theta_i$$

b) $\Delta p = ?$

$$\Delta p = mV_f - mV_i = m(V_f - V_i)$$

$$= 0.165 [(1\hat{i} - 1.73\hat{j}) - (1\hat{i} + 1.73\hat{j})]$$

$$\Delta \vec{p} = (0\hat{i} - 0.572\hat{j}) \text{ kg m/s}$$

(In polar form, $\Delta \vec{p} = 0.572 \text{ kg m/s } 270^\circ$)

