

$$d_x = 7.02 \text{ m}$$

$$a = -9.8 \text{ m/s}^2$$

$$t_{\text{total}} = .81 \text{ sec}$$

$$t_{\text{top}} = .81 \text{ sec} / 2 = .405 \text{ sec}$$

Calculate V_x :

$$d_x = d_o + V_{x,i} \cdot t + \frac{1}{2} a t^2$$
$$(7.02 \text{ m}) = V_x \cdot (.81 \text{ sec})$$

$$V_x = 8.6 \text{ m/s}$$

Calculate V_y :

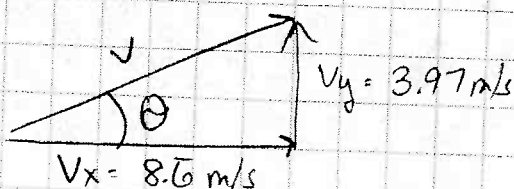
$$V_{y,f} = 0 \text{ m/s (at top)}$$

$$V_{y,f} = V_{y,i} + a \cdot t$$

$$0 \text{ m/s} = V_{y,i} + (-9.8 \text{ m/s}^2) \cdot .405$$

$$V_{y,i} = 3.97 \text{ m/s}$$

Calculate resultant V :



$$V^2 = V_x^2 + V_y^2$$

$$= (8.6 \text{ m/s})^2 + (3.97 \text{ m/s})^2$$

$$V = 9.5 \text{ m/s}$$

$$\tan \theta = \frac{V_y}{V_x}$$

$$\tan \theta = \frac{3.97 \text{ m/s}}{8.6 \text{ m/s}}$$

$$\theta = 25^\circ$$