

2/71 Set up x-y axes at the initial location of G.

$$\left. \begin{aligned} x &= x_0 + v_{x_0} t : 3 = (v_0 \cos \theta) t \\ y &= y_0 + v_{y_0} t - \frac{1}{2} g t^2 : 3.5 = (v_0 \sin \theta) t - 16.1 t^2 \\ v_y &= v_{y_0} - g t : 0 = v_0 \sin \theta - 32.2 t \end{aligned} \right\}$$

$$\text{Solve simultaneously : } \left\{ \begin{aligned} t &= 0.466 \text{ sec} \\ v_0 &= 16.33 \text{ ft/sec} \\ \theta &= 66.8^\circ \end{aligned} \right.$$