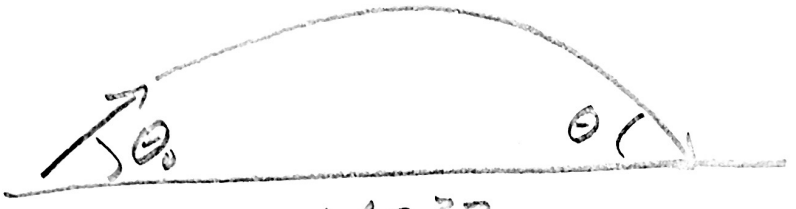
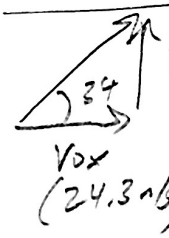
Y	X	V
V_{oy} =	V_x =	V =
V_y =	$\Delta t = 3.7s$	$\theta_0 = 34°$
$a = -9.8 m/s^2$	$\Delta x = 90m$	θ = ?
$\Delta t = 3.7s$		
Δy = ?		



$\Delta t = 3.7s$

$\Delta x = 90m$

$$V_x = \frac{\Delta x}{\Delta t} \Rightarrow V_x = \frac{90m}{3.7s} = 24.3 m/s$$



$$\text{Tan } 34° = \frac{V_{oy}}{24.3 m/s}$$

$$V_{oy} = 16.4 m/s$$

$$\Delta y = V_{oy} t + \frac{1}{2} a t^2$$

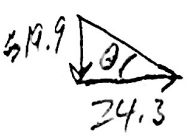
$$\Delta y = 16.4 m/s (3.7) + \frac{1}{2}(-9.8 m/s^2)(3.7s)^2$$

$$\Delta y = -6.4 m$$

$$V_y = V_{oy} + at$$

$$V_y = 16.4 m/s + (-9.8 m/s^2)(3.7s)$$

$$V_y = -19.9 m/s$$



$$\theta = \text{Tan}^{-1}\left(\frac{19.9}{24.3}\right) = 39.3°$$