



$$\frac{\Delta X}{V_i \cos \theta} = \frac{2 V_i \sin \theta}{g}$$

$$\frac{g \Delta X}{V_i^2} = \frac{g (\sin \theta)(\cos \theta)}{\sin 2\theta}$$

$$V_x = V_i \cos \theta = \frac{\Delta X}{\Delta t}$$

$$= \sin^{-1} 2\theta$$

$$y = V_i \sin \theta \Delta t + \frac{1}{2} g t^2$$

$$\frac{\sin^{-1} \left( \frac{g \Delta X}{V_i^2} \right)}{2} = \frac{2\theta}{2}$$

$$V_y = V_i \sin \theta + g t$$

$$2 \sin \theta \cdot \cos \theta = \sin 2\theta$$