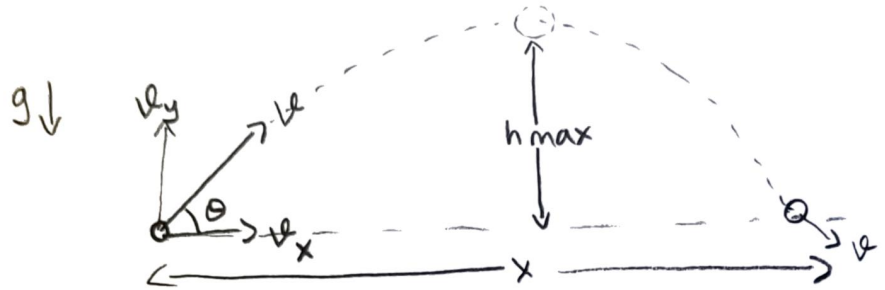

Time of flight

$$V_f = V_0 + at$$

$$0 = v_y - gt \Leftrightarrow t = \frac{v_y}{g}$$

t is half of flight

$$2t \rightarrow \frac{2v_y}{g}$$

$$v_y = v \cdot \sin\theta$$

so time of flight :

$$\frac{2 \cdot v \cdot \sin\theta}{g}$$

Max height

$$\Delta x = V_0 t + \frac{1}{2} a t^2$$

$$h = v_y t - \frac{1}{2} g t^2$$

$$h = \frac{v \cdot \sin\theta \cdot t}{2} - \frac{\frac{1}{2} g t^2}{4}$$

Axis Y

Range

$$\Delta x = V_0 t + \frac{1}{2} a t^2$$

$$X = v_x \cdot t$$

$$x = v \cdot \cos\theta \cdot t$$

Axis X

for the graph (x, h)