

Projectile Motion

Horizontal Equations of Motion

$$a_x = 0$$

$$V_x = V_{0x} = V_0 \cos \theta$$

$$\Delta x = V_{0x}t = V_0 \cos \theta t$$

Vertical Equations of Motion

$$a_y = -g$$

$$V_{0y} = V_0 \sin \theta$$

$$V_y = V_{0y} - gt = V_0 \sin \theta - gt$$

$$\Delta y = V_0 \sin \theta t - \frac{1}{2}gt^2$$

$$V_y^2 = V_{0y}^2 - 2g\Delta y$$