

# Physics Equations

---

## One dimensional kinematics

- $V = V_0 + at$
- $\Delta x = V_0t + \frac{at^2}{2}$
- $v^2 - v_0^2 = 2a(\Delta x)$
- *time to reach the peak* =  $-\frac{2V_0}{a}$

## Two dimensional kinematics

- $V_x = V_0x$
- $\Delta x = V_0x * t$
  
- $V_y = V_0y - 9.8t$
- $\Delta y = V_0y * t - 4.9t^2$
  
- $\Delta x (\Delta y = 0) = \frac{V_0^2 * \sin 2\theta}{9.8}$
  
- *Object falls:*  $4.9t^2$

## Relative Motion

- $V_{AC} = V_{AB} + V_{BC}$