

# Phabulous *Physics* Phormulas

## Linear Motion

$$\bar{v} = \frac{d}{t} = \frac{\Delta d}{\Delta t}$$

$$\bar{v} = \frac{v_i + v_f}{2}$$

## Accelerated Linear Motion

$$v_f = v_i + a\Delta t$$

$$d = v_i\Delta t + \frac{1}{2}a\Delta t^2$$

$$v_f = \sqrt{v_i^2 + 2a\Delta d}$$

$$a = \frac{\Delta V}{\Delta t} = \frac{v_i - v_f}{\Delta t}$$

## Newton's Laws

$$F = ma$$

$$F_w = mg$$

$$F_{gr} = G \frac{m_1 m_2}{d^2}$$

## Falling Objects

$$v_f = v_i + g\Delta t$$

$$d = v_i\Delta t + \frac{1}{2}g\Delta t^2$$

$$v_f = \sqrt{v_i^2 + 2g\Delta d}$$

## Curvilinear Motion

$$F_{cent.} = \frac{mv^2}{r}$$

$$\omega = \frac{\Delta\theta}{\Delta t}$$

$$\alpha = \frac{\Delta\omega}{\Delta t}$$

## Accelerated Circular Motion

$$\omega_f = \omega_i + \alpha\Delta t$$

$$\theta = \omega_i\Delta t + \frac{1}{2}\alpha\Delta t^2$$

$$\omega_f = \sqrt{\omega_i^2 + 2\alpha\Delta\theta}$$