1 Equations

1.1 Constant Acceleration Kinematic Equations

Determine which equation to use based off which variable is not given:

Constant Acceleration	Not Given
$v = v_0 + at$	Δx
$\Delta x = v_0 t + \frac{1}{2}at^2$	v
$v^2 = {v_0}^2 + 2a\Delta x$	t
$\Delta x = \frac{1}{2}(v_0 + v)t$	a
$\Delta x = vt - \frac{1}{2}at^2$	v_0

1.2 Special Case Equations

If an object only experiences normal force and gravity on an inclined plane of angle θ:

$$a = -g\sin(\theta)$$

In a pulley system of two objects, the acceleration between the objects relate with the equation:

$$a = -A$$

Newton's Second Law states:

$$\sum \vec{\mathbf{F}} = m\vec{\mathbf{a}}$$

$$\sum F_x = m\,a_x$$

$$\sum F_y = m\,a_y$$