Equations of motions

Distance = s, speed/velocity = v, initial speed/velocity = u
time = t, acceleration = a

$s = vt$

$a = \frac{v-u}{2}, \ a = \frac{\Delta v}{\Delta t}$

$v = u + at$

$s = ut + \frac{1}{2}at^2$

$s = vt - \frac{1}{2}at^2$

$v^2 = u^2 + 2as$

$s = \frac{u+v}{2}t$

For calculating the horizontal distance of an object thrown at an angle in the air or **projectile motion**, we can use $R = \frac{u^2 \sin 2\theta}{g}$ where R is the distance traveled horizontally, u is the initial velocity, θ is the angle, and g is the gravitational force.