Kinematic Equations for Motion with Constant Acceleration (g) along the Y axis (Vertically)
$V = Vo + g\ t$
$Y = 1/2\ (Vo + V)\ t$
$V^2 = Vo^2 + 2\ g\ Y$
$Y = Vo\ t + 1/2\ g\ t^2$

These equations are the same of that along the X axis when:
1- replacing X with Y and
2- replacing a with g (-9.8 m/s^2)

Along the X axis (Horizontally)	Along the Y axis (Vertically)
Kinematic Equations for Motion with Constant Acceleration	**Kinematic Equations for Motion with Constant Acceleration (g) along the Y axis (Vertically)**
$v = v_o + at$	$V = Vo + g\ t$
$x = \frac{1}{2}(v_o + v)t$	$Y = 1/2\ (Vo + V)\ t$
$v^2 = v_o^2 + 2ax$	$V^2 = Vo^2 + 2\ g\ Y$
$x = v_o t + \frac{1}{2}at^2$	$Y = Vo\ t + 1/2\ g\ t^2$

We can replace g with -9.8 m/s^2

Kinematic Equations for Motion with Constant Acceleration (g) along the Y axis (Vertically)
$V = Vo - 9.8\ t$
$Y = 1/2\ (Vo + V)\ t$
$V^2 = Vo^2 + 2\ (-9.8\ )\ Y$ $V^2 = Vo^2 - 19.6\ Y$
$Y = Vo\ t + 1/2\ (-9.8)\ t^2$ $Y = Vo\ t - 4.9\ t^2$

Kinematic Equations for Motion with Constant Acceleration (g) along the Y axis (Vertically)

$$V = Vo - 9.8\ t$$

$$Y = 1/2\ (Vo + V)\ t$$

$$V^2 = Vo^2 - 19.6\ Y$$

$$Y = Vo\ t - 4.9\ t^2$$