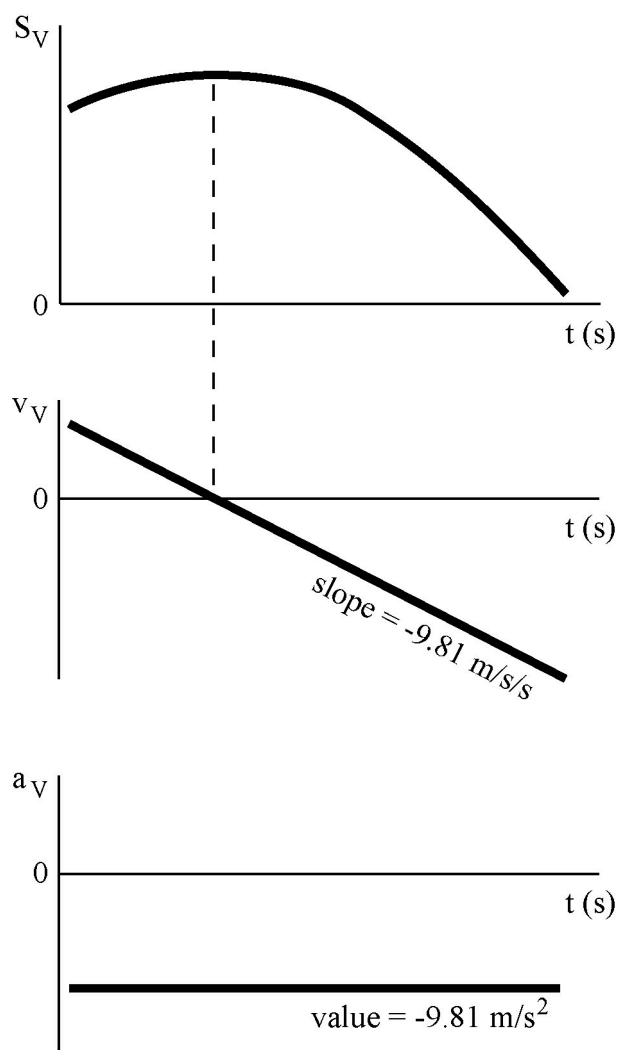


Vertical motion of a projectile:



Uniform motion:	velocity = constant
Uniformly accelerated motion:	acceleration = constant
Variably accelerated motion:	acceleration changes

Equations of uniformly accelerated motion:

$$v = v_0 + a \cdot t \quad [1]$$

$$S = S_0 + v_0 \cdot t + \frac{1}{2} a \cdot t^2 \quad [2]$$

$$v^2 = v_0^2 + 2 \cdot a \cdot (S - S_0) \quad [3]$$

v_0 = initial velocity

v = final velocity

a = acceleration

S_0 = initial location

S = final location

t = time between the beginning and the end of the studied motion

Recipe:

- (1) What do you want to know?
- (2) What do you already know?
- (3) Select equation.
- (4) Substitute values.
- (5) Solve.

Sample problem: Toppling dive

