

Parabolic Motion

Vertical:

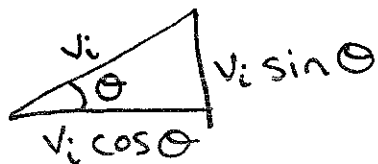
$$h_f(t) = h_i + v_i t + \frac{1}{2} a t^2$$

gravity: $32 \text{ ft}^2/\text{sec}^2$ or $9.8 \text{ m}^2/\text{sec}^2$

Horizontal:

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

Initial Velocity Triangle



Instantaneous Velocity

$$v(t) = \frac{h_f(t) - h_f(t_1)}{t - t_1}$$

↓
Instantaneous
Velocity
at time t

Final height
at time t_1
where t_1 is
REALLY close
to t