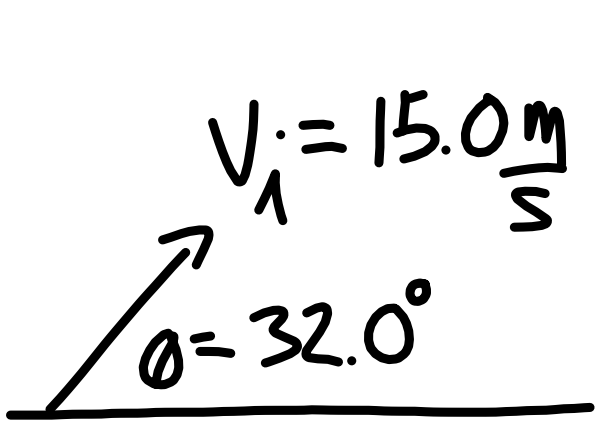
ex:



$t_+ =$ ____

$d_+ =$ ____

$d = v_i t + \frac{1}{2} a t^2$ $\quad v_f^2 = v_i^2 + 2ad$

$v_f = v_i + at$

Y

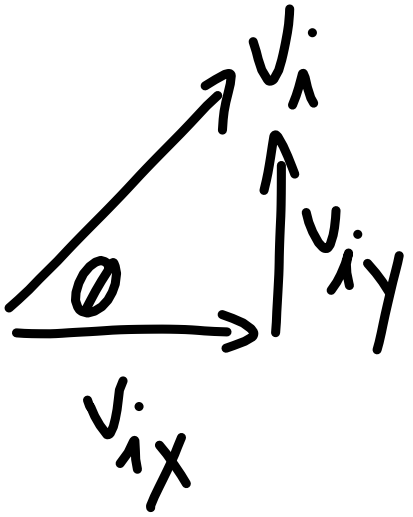
0 at top

$v_f = v_{iy} + at$

$0 = v_{iy} + at$

$-v_{iy} = at$

$\frac{-v_i}{a_y} = t$



$\frac{-v_i \sin\theta}{g} = t$

$\frac{-(15)\sin(32°)}{-9.81} = t = 0.8105\ s$

$t_t = 1.62\ s$

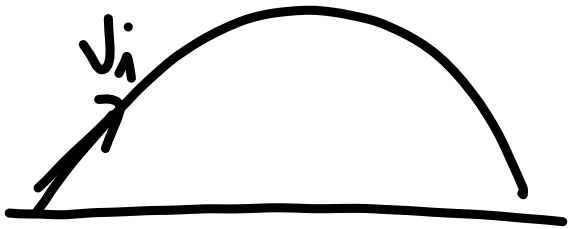
X

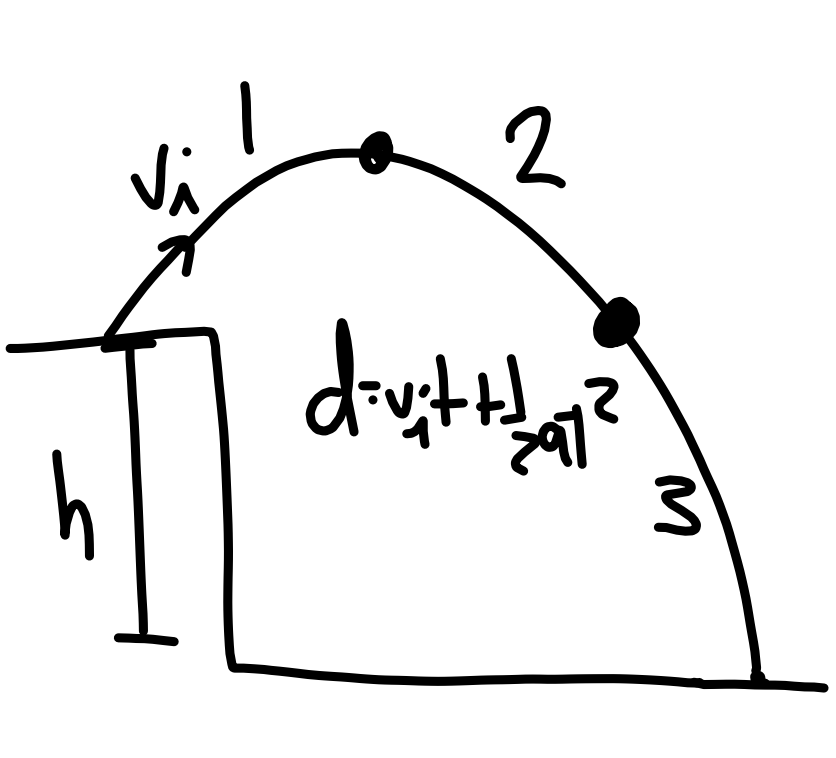
$d = v_{ix} t + \frac{1}{2} a t^2$ (0)

$d = v_{ix} t$

$d = v_i \cos\theta \, t$

$d = (15)(\cos(32))(1.62) = \boxed{20.6 \text{ m}}$


v_i


v_i
1
2
3
h
$d = v_i t + \frac{1}{2} g t^2$

$$x(t) = x_0 + v_i t + \frac{1}{2} a t^2$$

$$y(t) = y_0 + v_{iy} t + \frac{1}{2} g t^2$$

$y_0 \rightarrow c$

$v_{iy} \rightarrow b$

$\frac{1}{2} g \rightarrow a$

$v_i \sin\theta \rightarrow b$

$-4.905 \rightarrow a$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$