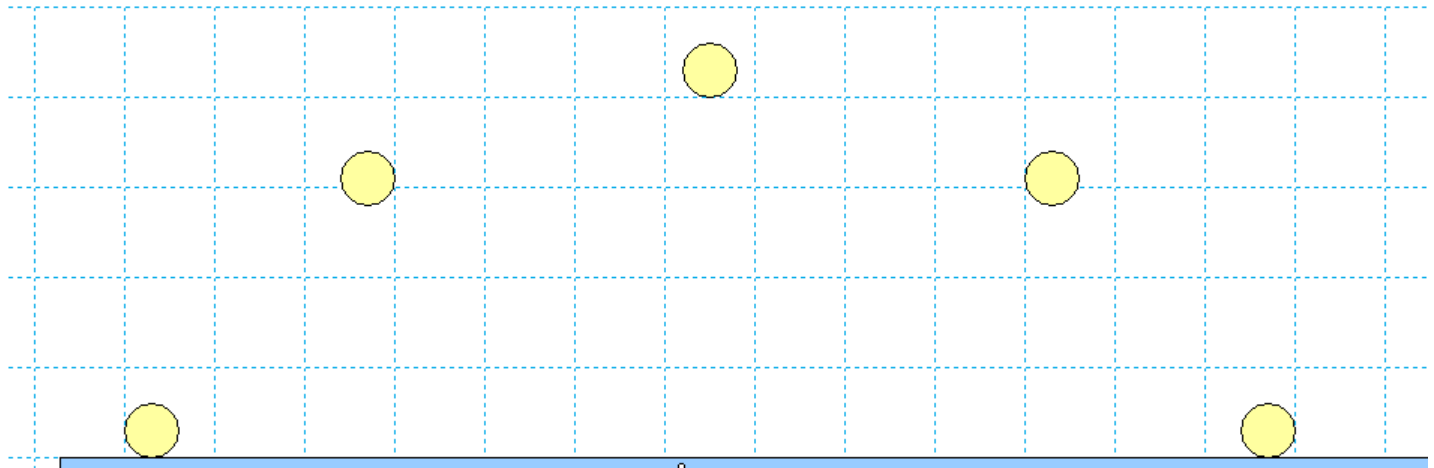


Projectile Motion: Launch at an Angle



1. Find the horizontal (x) and vertical (y) components of initial velocity.
2. Find time ($t_{1/2}$) to d_y max. This is where $V_y = 0$
3. Total time or “hang time” = $2 \times t_{1/2}$ (*two times the time to d_y max*)
4. Find the maximum height (d_y max)
5. Find max range (d_x)... = V_x times total time

Horizontal Constant <u>velocity</u> (inertia)	Vertical Constant <u>acceleration</u> ($a = -g$)
$d_x = v_x t$	$d_y = v_y t - \frac{1}{2} g t^2$
	$v_{yf} = v_{yi} - g t$
$d_y = \frac{v_{yf} + v_{yi}}{2} t$	$v_{yf}^2 = v_{yi}^2 - 2 g d_y$

