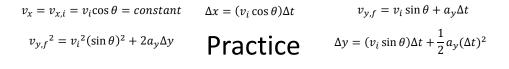
Projectile Motion

2nd video



A projectile is launched with at an angle of 35° above the horizontal and lands 26 meters away.

- a. What is the initial speed?
- b. What is the max height reached?

$$v_x = v_{x,i} = v_i \cos \theta = constant$$
 $\Delta x = (v_i \cos \theta) \Delta t$ $v_{y,f} = v_i \sin \theta + a_y \Delta t$
 $v_{y,f}^2 = v_i^2 (\sin \theta)^2 + 2a_y \Delta y$ **Practice** $\Delta y = (v_i \sin \theta) \Delta t + \frac{1}{2}a_y (\Delta t)^2$

A projectile is launched with at an angle of 35° above the horizontal and lands 26 meters away.

- a. What is the initial speed?
- b. What is the max height reached?

$v_x = v_{x,i} = v_i \cos \theta = constant$	$\Delta x = (v_i \cos \theta) \Delta t$	$v_{y,f} = v_i \sin \theta + a_y \Delta t$
$v_{y,f}^2 = v_i^2 (\sin \theta)^2 + 2a_y \Delta y$	Practice	$\Delta y = (v_i \sin \theta) \Delta t + \frac{1}{2} a_y (\Delta t)^2$

A projectile is launched with at an angle of 40° above the horizontal and an initial speed of 6.44 m/s. If the projectile is in the air for 1.33 seconds, what is...

- a. the horizontal displacement?
- b. Vertical displacement?

 $\begin{array}{l} \underline{Givens} \\ \Delta y = _ \\ g = -9.8 \ m/s^2 \\ v_i = 6.44 \ m/s \\ \Delta x = _ \\ ^o = 40 \ ^o \\ \Delta t = 1.33 \ s \end{array}$