

$$1+2=3$$

Type III projectiles are off of a height (like type I) and have a  $v_x$  component (like type II).

We have 2 methods to use. Choose w/e you like.

1) Find  $v_{of}$  with

$$v_f^2 = v_0^2 + 2ad$$

2) Use that to find t:

$$v_f = v_0 + at$$

3) Find  $d_x$  using:

$$d_x = v_{0x}t + \frac{a_x t^2}{2}$$

\*note how  $a_x=0$ ... that terms disappears.

1) Just use the quadratic equation to find time.

$$d_y = v_{0y}t + \frac{a_y t^2}{2}$$

-c            b            a

2) Use this time in:

$$d = vt$$

### Method 1:

Let's launch a zombie head off of a 15m cliff at an angle of  $45^\circ$ .  
What is the range?<sub>18.4m</sub>

### Method 2:

You can expect one type III on your test.  
You should be able to do all the problems in the textbook now.