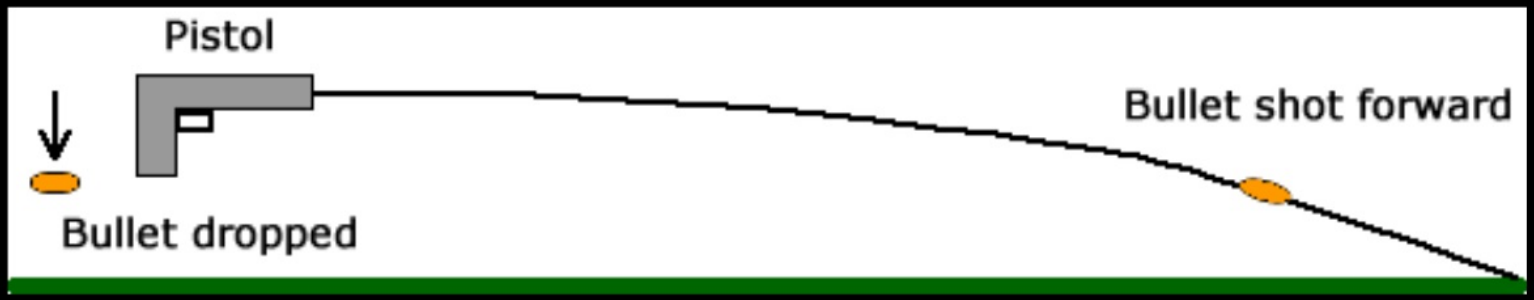
6.1.20

2d Motion: Projectiles

Today's Objectives:

- Start Projectile Chapter
- What is a projectile?
- What equations calculate their motion?

If you fire a bullet and drop another bullet, which one hits the ground first?



2D Motion: Projectiles

Examples: baseball, basketball, bullet, cannonball

Anything thrown or fired

(No engine)

What forces are acting on the baseball after it's thrown?

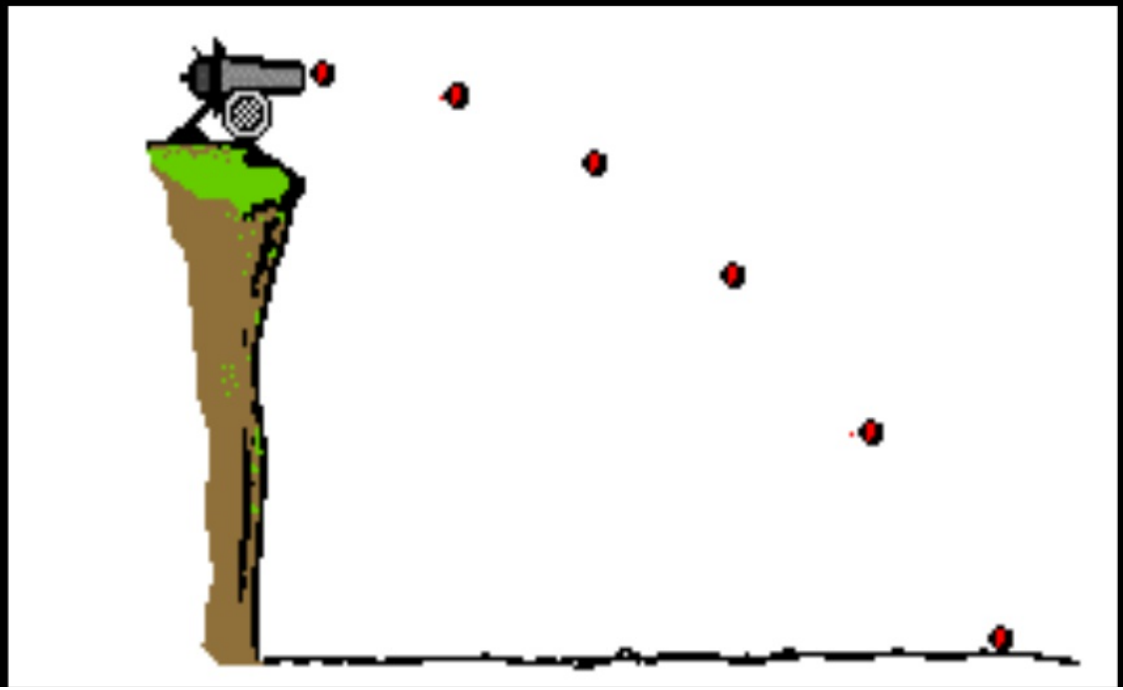
Gravity Only! $\downarrow F_g$

(No applied, air resistance)

The motion of a projectile can be split into two parts:

←→1) Horizontal (c.v.)

↓ 2) Vertical (speeds up)



When a plane drops a package, what path does the package follow?

100 mph

100 mph

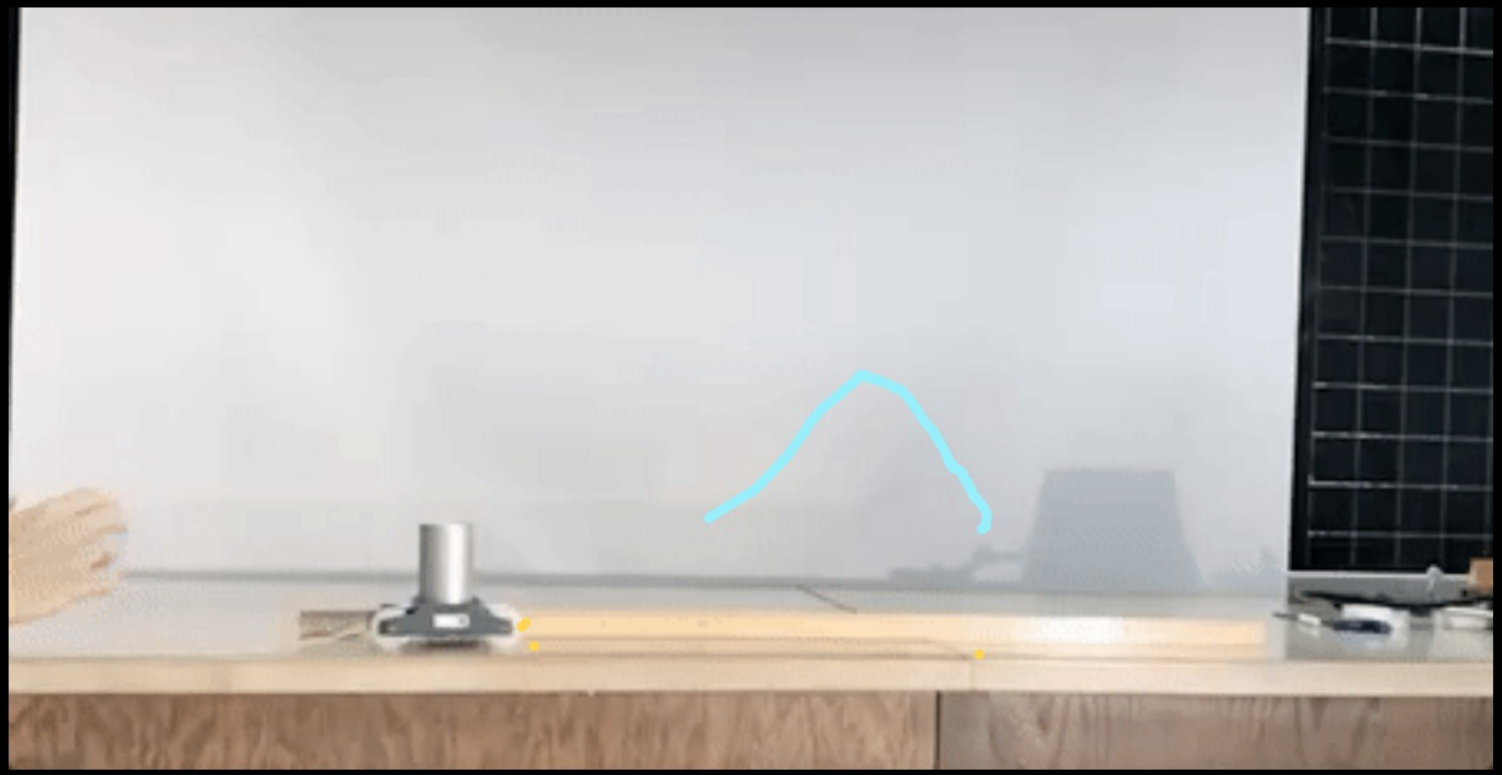
Parabolic Trajectory

(1/2 Rainbow)

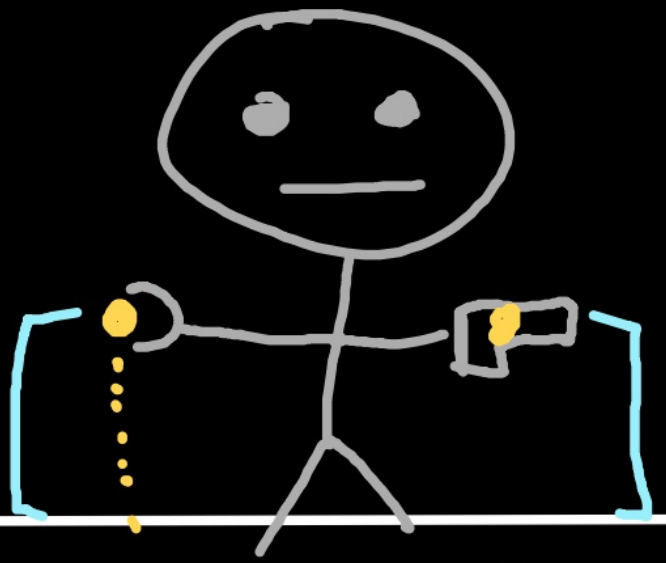
Note: the package doesn't fall straight down, it keeps moving to the right as it falls!

If you are riding a motorcyle and fire a flare upwards, where will the flare land? (No Air Resistance)

On you!!!,
remember it keeps moving to the right with you.



If you shoot a bullet and drop another one,
which one will hit the ground ~~first~~?



Same Time!

(fall the same vertical distance)