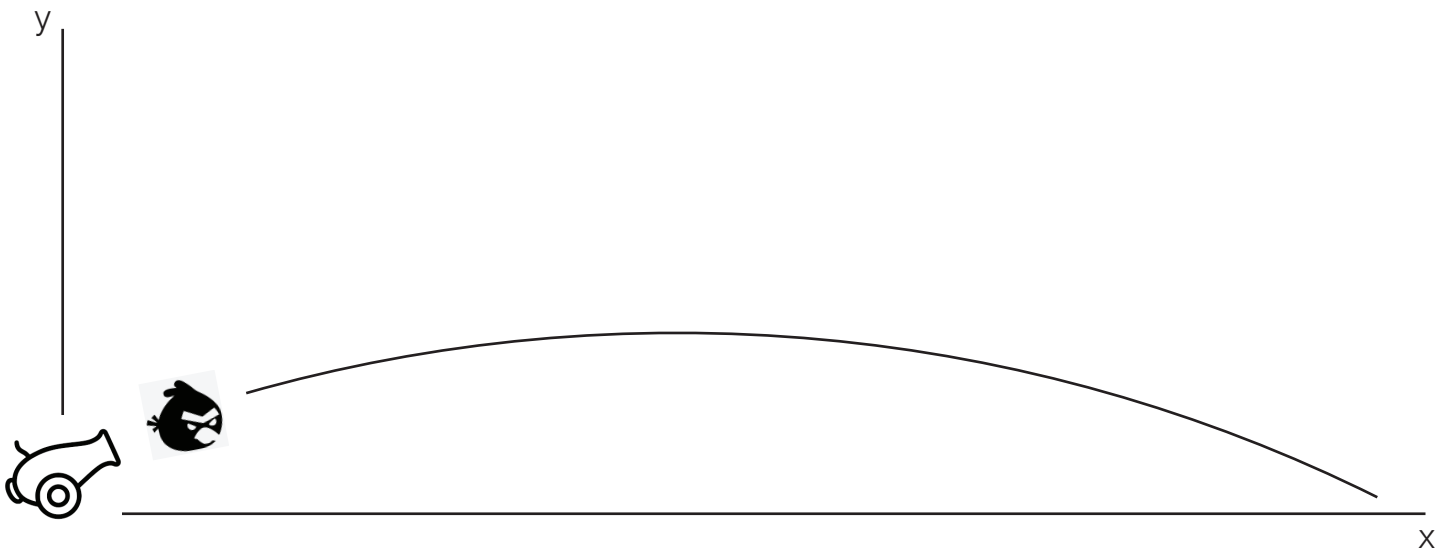

Imagine you fire a projectile from a cannon. The projectile starts with a velocity V_x along the ground and V_y going up-and-down.

The projectile's position in the y-dimension is subject to the force of gravity (the constant g)...

$$y = V_y * t - \frac{g * t^2}{2}$$

At what time, t, will the projectile hit the ground?

What should be the relationship between V_y and V_x in order for the projectile to fly the farthest? That is, what angle will the cannon be set? It might be hard to totally nail this without calculus (that's next term :), but see if you can validate your intuition.

At this angle, where on the x-axis will the bird hit the ground?