AP Physics C Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Directions for PhET Simulation: Projectile Motion

http://phet.colorado.edu/en/simulation/projectile-motion

1. Experimentally determine five different launch angles that will have you land a projectile on a target 20 m away from the cannon. The target should be at the same y-displacement as the cannon. Draw a (neat and organized) table with your five trials in one column, the initial launch angle in another, and the initial velocity in a third column.
2. Show explicit calculations for an initial velocity and launch angle that will have a projectile land on the target placed at 30 meters in the x-direction and 0 meters in the y-direction.
3. Show explicit calculations for an initial velocity and launch angle that will have a projectile land on the target placed at x- and y-displacements of your choice. List the x- and y-displacements, time, initial velocity, and launch angle in addition to your calculations.
4. Turn on "Air Resistance." Create a model for the way air resistance is portrayed in this simulation. Is this a realistic representation of the way air resistance actually works?