Physics 200 (Stapleton) Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Projectile Launcher Project

The requirements and scoring criteria below apply to each competing group. This is to be submitted as a group. There are no individual requirements.

\*\* The grade value of this assignment will be equivalent to ½ of a unit test grade. If I input these grades before the next test, this will be approximately 27% of your grade. Just after our next test, this will be around 16% of your grade.

1. [30 points] 1 Functional Spreadsheet, including:
   1. Trajectory calculations and graph
   2. Muzzle velocity calculator
   3. Launcher setting (muzzle velocity) table and graph
2. [30 points] Correct “solutions” to the problems. These must include:
   1. Release Angle
   2. Muzzle Velocity
   3. Launcher Setting
3. [30 points] Scored Shots
   1. You get two shots at each target.
   2. Your first shot at each target must be fired at the angle and setting that you submitted with your solutions (see #2, above).
   3. The Shots (two chances for each):
      1. Horizontal shot (0° angle) to lower elevation
      2. Angled shot over an obstacle (40° angle or greater).
      3. Shot through a “window”. Any angle.
   4. Scoring the shots (keep the score from the best shot):
      1. 10 points = 0-10% error (based on horizontal distance to target)
      2. 9 points = 10-20% error
      3. For over 20% error, points will equal = 11- (% error / 10)

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