**Homework: Projectile Motion**

Show all of your work, you may use a separate sheet of paper. You may use the equations from the lab handout. You will need the data from the lab handout to complete this worksheet. Each problem you get correct results in a prize, up to 9 prizes total!

1. Calculate how high your ball would get if it were shot from a 900 launch angle (straight up).
2. How long would the ball take to get to this height?
3. Calculate the total time the ball spent in the air for each of the launch angles in Part A of the lab.
4. Calculate the maximum height the ball should reach for each angle in Part A of the lab.
5. How long did it take the ball to get to each of the heights in question 4?
6. What would happen to the range if the ball were shot at an angle below the horizontal? The launcher is aimed down in this situation, use the picture below as a guide to draw, on a separate page, what you think will happen for the different angles the ball is launched from. What angle gives the max range now?

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1. What if there was air resistance involved, how would this affect your range values?
2. Using the equation below, which accounts for air resistance, calculate the range for each of the launch angles in Part A of the lab. Note: you must have the total time the ball was in the air for each angle.
3. Look up the Coriolis Effect and write one paragraph describing this effect; this is to be turned in with the worksheet.