Lab: Catch the Ball AP Physics

Background
Two-dimensional motion can be analyzed by considering the horizontal and vertical components of motion independently.

Objective
To catch the ball!

Equipment
1 small ramp
2 meter sticks to make a track for your ball (and for measurement)
1 wood board (to make a stopper for the ball, so it can't roll off the table)
2 clamps to hold the ramp and the board
1 metal ball
1 string with a metal washer attached, to hang from the end of the table

Procedure
Set up your equipment as demonstrated in class.

1. Figure out how to measure the speed of the ball as it rolls across the table. (Be sure to always release the ball from the same point on your ramp, so that its speed is the same every time you release it.)
   a) Describe your method for figuring out the rolling speed of the ball.

   b) Take the data that you need, and then calculate the rolling speed of the ball in the space below:

2. Using what you know about "horizontally projected objects," predict how far the ball will land from the base of the table if you let it roll off the table. (You may want to make some more measurements...) Show your calculations here:

3. After you've made your prediction, call the instructor over to give you a cup. Put the cup in the location that you predicted in Step 2. Release the ball and let it roll off the table. Did you catch the ball? If not, figure out why, and try again until you get it!

Questions
None