PROJECTILE MOTION

For lab this week we will study two-dimensional motion under the influence of gravity by looking at the motion of a projectile.

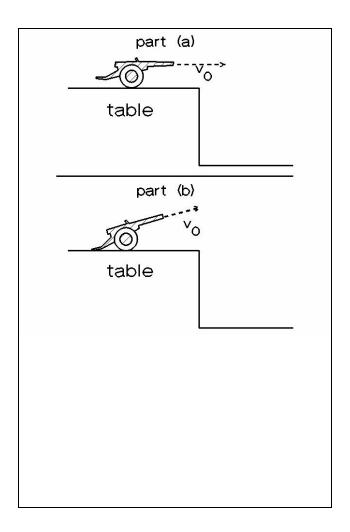
The apparatus in lab can project a metal ball of about 2 cm diameter. This can be set on a table to project the ball horizontally or at an angle. We will do both.

A. Measuring the speed of a projectile:

- With the "projector" horizontal consider what measurements you think you should make in order to determine the speed with which the ball leaves the "projector". Be prepared to discuss these.
- 2) Make what measurements you decide are necessary. Take multiple measurements, as appropriate, to be able to estimate the uncertainty.
- 3) Calculate the speed taking into consideration the uncertainty of your measurements.

B. Prediction of a landing location:

1) Using your value of speed obtained above, predict where the projectile will land when the apparatus is at an angle. Although not exact, you can assume a percent uncertainty in your horizontal position calculation of three times the percent uncertainty you determined in (A) for the initial speed.



2) Check out your prediction by firing the projectile and seeing if it lands at your predicted position within the uncertainty.