

## PHYSICS GROUP LAB EXAM REVIEW I

Work in a group of 2-3 ..... and keep careful notes.

### THE PROBLEM:

To roll a ball off a ramp then off a table so that it reaches the ground in exactly 2 seconds and be able to mark where it lands. NOT TRIAL AND ERROR!

Friction and air resistance are NOT in effect.

I) What would the path, and the distance-time, velocity-time, and acceleration-time graphs look like?

II) How would you set up the problem. What measurements would you need to take, how would you do it, and what results would you predict? Try and have the least number of measurements possible. Show a data table and picture of your setup.

III) What calculations would you do to calculate the “answer”?

## PHYSICS GROUP LAB EXAM REVIEW II

Work in a group of 2-3... keep careful notes:

### THE PROBLEM:

To slide coffee filter(s) off a table so that it reaches the ground in 2 seconds, and be able to mark where it lands. NOT TRIAL AND ERROR!

Friction, AND air resistance are in effect.

In this case the FORCE of air resistance is proportional to the instantaneous VELOCITY of the object... it increases as velocity increases, and decreases as velocity decreases. This means that there is almost a constant change in acceleration (JERK) till A is zero.

I) What would the path, and the distance-time, velocity-time, and acceleration-time graph look like for NO friction, air resistance? How about with?

II) How would you set up an experiment to find out what other factors the force of air resistance depends on? What measurements would you need to take, how would you do it, and what results would you predict? Show a data table and picture of your setup.

III) What calculations would you do to calculate the “answer”?