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| **Physics 22 Laboratory Report****Experiment O2:****Projectile Motion****Prepared By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** **Date:** **Partner**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Lab Instructor:** **Lab Section:** Lab Instructors initials: \_\_\_\_\_\_\_\_\_ |
| Spring 09 |
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| **Remarks by Grader:** **Grade:**  |

**OBJECTIVES**:

 1. To determine y vs. x for a projectile launched by rolling down a ramp.

 2. To use Regression Analysis to fit a quadratic function

**Reading**:

 Supply the appropriate reference to your textbook. Title, Author, Page(s).

**Introduction**:

**Apparatus**: You supply. Include diagram

**Procedure:** You supply

**Measurements:** Place a table of your measurements and a plot of y *vs.* x here. Suggest you make the table in EXCEL and paste it here.

**Analysis**:

1.Using Regression from the "Tools" menu, fit a parabola to your measured values of x,y.

 To fit a parabola, mark the columns x and x-squared as the x range. You will have to first to make a column of “x2”, adjacent to the “x” column.

2. From the information in the table produced by the regression analysis, write the equation you have found for y(x) = y0 + bx + cx2.

**Conclusions:**

1. Why does it make sense to fit your measurements to a parabola? Answer this question by starting with x(t) = v0xt and y(t) = y0 + v0yt - (1/2)gt2 and then derive an equation for y(x) versus x.
2. Can you determine the gravitational constant g from your measurements?