Phys 223 Lab 3: Graphical Analysis

Pre-lab Name: ______ Section: _____

Read over the theory and procedure for this lab before completing this pre-lab.

1. What is the purpose of this lab?

- 2. Imagine if there was a part 3 of this lab procedure, where you draw a set of squares, with side lengths of your choosing, and then measure their areas by counting squares on graph paper. Let the side length of the square be the variable x and the area be A.
- a) Is A or x the independent variable in this hypothetical situation?
- b) If you wanted to construct a graph of your data, would A or x be on the vertical axis?
- c) What would be the title of your graph, Area vs Side Length or Side Length vs Area?
- d) Thinking about the (well-established) theoretical equation for the area of a square A=x², which functional form would you choose for a regression curve? Choices are: linear, exponential, polynomials of order 2, polynomial of order 3, etc.
- e) Still considering the equation $A=x^2$, what is the theoretical prediction for the leading coefficient of the regression curve?