Name: _____

Team member names: _____

Class Period: _____

Date of Experiment: _____

Due Date of Report: _____

Title of Lab: _____

Purpose of this lab:

To determine the _____ between:

- Independent variable: _____ abbreviation: _____ unit: _____

- Dependent variable: _____ abbreviation: _____ unit: _____

For _____

Our math model (with relevant variables and appropriate units):

Written relationships: This tells us that

_____ is proportional to / inversely proportional to (circle one) _____

Because...

when _____ increases, _____ increases/decreases (circle one)

Our y-intercept value (with units):	**The physical meaning of our y-intercept:**
Our slope value (with units):	**The physical meaning of our slope:**

The general formula:

New vocabulary terms and their definitions:

Possible source of error #1:	**How error #1 could be avoided/corrected:**
Possible source of error #2:	**How error #2 could be avoided/corrected:**

Conclusion Outline

Paragraph 1: Introduction	
Introductory Sentence (Restate purpose)	This will help guide the discussion the conclusion as well as tell the reader what the variables are for the lab. It will let the reader know what relationship was being studied.
Transition Sentence	Now tell the reader that the relationship that was discovered was... linear, quadratic, etc.. Also tell the reader that this relationship tells us that _____ is proportional/inversely proportional to _____ (see template above). This gives a simple explanation for how the variables are related graphically (which is half of the purpose of the lab) before going into the mathematical relationship (which we obtained from the graph).
Math Model	The math model we discovered was... This takes the qualitative "linear relationship" and makes it more quantitative.

Paragraph 2: Y-Intercept	
Transition Sentence	Now that you have stated the mathematical model, you will explain each part of the equation. Tell the reader that you will now focus on the y-intercept.
Physical Meaning	Physical meaning of the y-intercept, including your value (with units).
New Vocabulary	If applicable, state **and** define the new vocabulary term for the y-intercept.
Conceptual Explanation	Conceptually, explain if the value you got makes sense.
Mathematical Explanation	Mathematically, explain if the value you got makes sense (how big is it compared to your largest y-value).
Expected Value	Explain what we would have **expected** the y-intercept to be.

Paragraph 3: Slope	
Transition Sentence	Now tell the reader that you will now focus on the slope.
Physical Meaning	Physical meaning of the slope, including your value (with units).
What if...	Explain what would happen/what it would physically mean if the slope were larger/smaller.
New Vocabulary	If applicable, state **and** define the new vocabulary term for the slope.

Paragraph 4: General Formula	
Transition Sentence	Tell the reader that, based on the information discussed earlier and on a class consensus, you will show how to get from your math model to the general formula.
Derive the Formula	Now show that process. You should take a few sentences to explain how to arrive at the final equation. This is especially true if you end up removing parts of the equation as needed if they end up being zero/close to zero.
New Vocabulary	State and define any remaining vocabulary terms needed to understand the general formula.

Paragraph 5: Sources of Error/Inaccuracy	
Transition Sentence	Tell the reader that even though you were able to derive the general formula, that your data could have been more accurate or precise.
Source of Error #1	Explain one possible source of inaccuracy or error. **Be specific.** You need to describe limitations about this lab (either the procedures or the equipment). Do NOT describe ways that you were not "careful" enough (such as you calculated or graphed something wrong).
How to Reduce Error #1	Explain how you could reduce that source of error. **Be specific.** For example, what equipment could you use or what precautions could you take when measuring.
Source of Error #2	Explain one possible source of inaccuracy or error. **Be specific.** You need to describe limitations about this lab (either the procedures or the equipment). Do NOT describe ways that you were not "careful" enough (such as you calculated or graphed something wrong).
How to Reduce Error #2	Explain how you could reduce that source of error. **Be specific.** For example, what equipment could you use or what precautions could you take when measuring.
Concluding Sentence	Give some conclusion about how closely your math model matched the general formula and if the experimental errors had a large effect or not.