Name of the Experiment

Your Name, Partner Name

PS253 ##DB, Instructor Name

Department
University
City

Due Date

Abstract

This section is the abstract, it will consist of a single paragraph that is should be about 8 sentences *MAX*. Be direct, and make each sentence specialized to an important aspect of the experiment. In a formal context, an abstract is meant to be used to allow for easy searching of papers, and allowing others to easily determine how relevant the paper is to their work. Include the goals of the experiment in this section as well as a general statement about the method/device used. State what was measured, then state the main numerical results. Be sure to include uncertainty, as well as the theoretical value for reference.

Statement of Purpose

Use this section to define the goal of the experiment. It should be 4 sentences or less. Define the scope of work, meaning what context can this data be assumed to be relevant for. Your conclusion later in the paper could be only applicable in a specific range of conditions, so make sure to acknowledge that.

Experimental Methods

This section allows you to explain the experimental procedures, which allows others to recreate the experiment and validate your results in the future. Describe the equipment you needed, as well as any other materials that were used. Explain how to operate the equipment, and provide notes of things that you did in order to conduct the experiment accurate, such as holding the pole for a pendulum experiment to keep it from wobbling. Define the dependent and independent variables, as well as how to measure them. State any assumptions made, as they can make fairly sigificant differences in how the experiment is processed. DO NOT COPY FROM THE MANUAL

Results

This will be the largest section of the paper, and will contain the majority of the graphs and figures present.

Analysis of Data

Explain how the data in the experiment was analyzed to turn the measurements into results. Be sure to use math in the explanation. Briefly cover theory and where the data comes from. State any further assumptions that were made in the calculation, not any assumptions made during the design and running of the experiment. Assumptions can also include data removed, specific function use in Excel, if absolute value was used for something, etc. Approximation and simplification also count as assumptions.

Summary of Experimental Results

This subsection contains the numerical results of the experiment, with uncertainties. These numbers should be compared to expected values from the theory and math. Provide an analysis of the results to see if they support theory and expectations. Interpret if the results indicate a

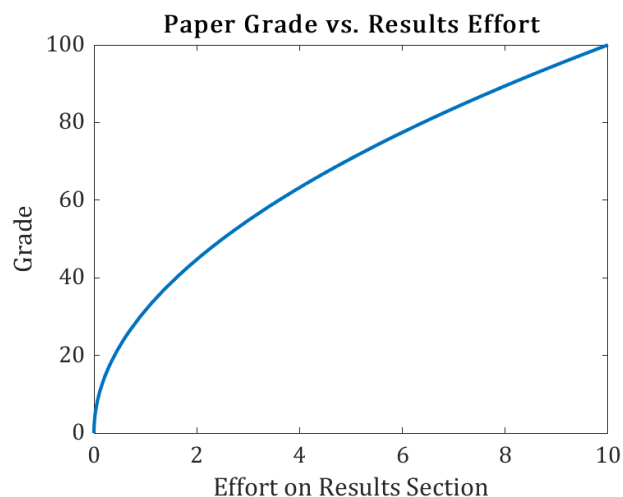successful, unsuccessful, or inconclusive experiment, while directly addressing the statement of purpose.

Paper Grade vs. Results Effort

Fig. 1. *Plot indicating thing, with a caption that provides more insight to the data than the labels and title do.*

Conclusions

Overall, this section is about thoughts about the work, as well as what could have affected results and ways to mitigate these effects.

Discussion of Uncertainties

Use this section to discuss a minimum of two sources of uncertainty in the experiment. Make sure they are meaningful and actually affect the results. State what specific data was affected, as well if it was as positive, negative, or random bias. Predict the magnitude of the effects, this can be vague though, like: *This source of uncertainty presents a large bias on the data.* If any discussions that were made appear to have been a bad call, explain that here too.

Thoughts for Improvement

Using the sources of uncertainty discussed above, come up with at least two ways the experiment could have been changed in order to mitigate those sources. Explain why these changes will help.

References

Insert references here, though there likely won't be many. Attempt to follow APA7 standardization. BibTeX may be implemented in the future to allow for automatic citation management and insertion with proper formatting. Using the hanging package is suggested.

Appendix I.

I will be putting the raw data from the experiments here in table form, as well as possibly putting MATLAB code used for processing data efficiently in here. This is personal preference and not required, though is referred to in the submission page for the summaries.