Math Modeling Final Project

The final report has the following sections:

- *Introduction* – this includes a statement of the problem being solved and a short background about the problem. Why is this problem important? Has anyone else ever tried to solve the problem? **The introduction should prepare the reader to understand the rest of your report.**

- *Formulation* – this should include a description of your model, a discussion of all of your assumptions and definitions for any variables that you are using. Why should I trust your model? How did you come up with the current model? **This should at minimum include at least one diagram of your model and equations describing the mathematics involved.** After reading your formulation, your reader should be able to recreate your model on their own.

- *Results* – this is where you describe what you found, this is your punchline, this is where you wow the world with your scientific findings! What did you learn from your model? **This section absolutely must include data in the form of graphs, tables, eigenvalues, etc. You also must discuss each result, don't just report your numbers!** You should do a sensitivity analysis of your parameters and a validity test if you have data available. Start by showing some baseline data, then vary your parameters to show how the outcomes change.

- *Discussion* – this is a discussion about your findings. If you made management suggestions, discuss them here. What data would you suggest that field researchers find, in order to make your model better? How you might change your model? Are there other possible models that might work better or worse than yours? Were there any BIG assumptions made that should maybe be reassessed in future work?

- *Conclusion* – this is a very short review of what you did in the paper. A reader should be able to read just your introduction and your conclusion and get the basic idea of what your results were and why they matter.

The mathematics is clearly stated in words so that a beginning student can understand it. The mathematics is correct. You triple checked all your units and calculations.

The solution to the project is a typed report (single spaced).

The final report has been proof read multiple times for grammar and spelling.

The report looks professional and the writing is high quality and easily readable. You can look to the Loggerhead Turtle article for an example of good scientific writing.

All helpful information (graphs, data, computer programs, etc) has been included and all included information has been referenced/discussed in your report. **Your reader should not have to search your paper to find the relevant figures or run your model themselves.** It is also fine to put SOME information in an appendix, especially if it is a large data set or computer code, but make sure to explain what it is, your reader should not have to guess. In general you should not include a copy of the actual spread sheet or your code, **it is your job to interpret the results of the model for your reader.**

All graphs, equations, and tables appear correctly in the paper and are clearly labeled. It is ok to leave space and carefully write in the equations.