

# Drafting a Final Report

Justin Skycak, 2019

**Abstract.** Your final report should be written in a Google Doc. Please use the same format that is used in [this document](#). Once you are finished with the report, [submit a link](#) to the Google Doc.

## Introduction

The introduction section is where you introduce the reader to the context of the problem before diving into the gory details. You should take a paragraph or two to remind the reader of the key ideas which motivate your work -- for example, if your problem is to calculate some probability, then remind the reader how probability is calculated.

Once you have introduced the reader to the mathematical background surrounding the problem, you should state the problem and explain why the problem is a good research problem -- namely, why it is interesting yet approachable. You might do this by suggesting a simple problem, and then framing your chosen problem as a more interesting version of that simple problem. Or, you might suggest a complicated problem, and then frame your chosen problem as a more approachable version of that complicated problem.

Note that mathematical papers conventionally use the typesetting language LaTeX (lā-tek). If you are familiar with LaTeX, then feel free

to use the [Auto-Latex Equations](#) add-on to use LaTeX in your report. Otherwise, you can use the Google Docs equation editor (Insert > Equation) or the [MathType](#) add-on.

LaTeX	$\sum_{n=0}^{\infty} a_n r^n = \frac{a_0}{1-r}, \quad  r  < 1$
Google Docs Equation Editor	$\sum_{n=0}^{\infty} a_n r^n = \frac{a_0}{1-r}, \quad  r  < 1$
MathType	$\sum_{n=0}^{\infty} a_n r^n = \frac{a_0}{1-r}, \quad  r  < 1$

## Results

The results section is where you explain your approach to the problem and present the results from that approach. For example, if your problem was to calculate some probability, then you might explain how you organized the problem into a procedure, and then executed that procedure. You should especially emphasize any non-obvious insights you used while solving the problem.

The results section should include plenty of math, and potentially graphs and/or diagrams as well. To create a graph, you can plot the graph on [Desmos](#) and insert a screenshot into your report. To create a diagram, one option is to physically draw out the diagram with a pen and then take a picture. You may do this, provided your writing is *very neat*. Another option, which is much more professional, is to create the diagram using shapes in a Google Slide, and then save the slide as a PNG file which can be inserted into your report.

## **Conclusion**

The conclusion section is where you restate the main idea of your results and explain what you might do next if you were to continue working on the problem. Did you solve the problem? If so, how might you make the problem more difficult and/or generalize your solution to a wider class of problems? If not, then why didn't your approach work, and what method(s) might you try next, that don't share the same weakness as your original approach?