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| Writing Mathematical Reports |
| Guidance for Academic Papers |

## General Comments

1. The goal of the report is to provide the reader with a conceptual understanding of the problem, the important quantities involved, the relationships among them, and your solution. Your project report is neither a manual, nor a recipe, nor a documentary of your efforts.
2. Depending on the project, there might be a family of possible behaviors, rather than a single answer. Your job is to help the reader understand that family, how you found it, and what it means.
3. Although a non-specialist might get lost in the details of your report, anyone should be able to read your paper, get a sense of the problem you are addressing, and how you solved it.

## Writing Style

1. Your writing should flow and be easy to read, but should be formal. Use well-ordered sections and paragraphs to provide structure for your reader.
2. Avoid writing in first person singular (I, me, my).
3. The document should be written primarily in present tense.
4. Active voice is typically preferred, but passive voice is acceptable in some fields. Whichever you choose, be consistent throughout the document.
5. An equation is a grammatical element of the sentence in which it resides, the equals sign being shorthand for the verb “to be,” often read simply as “is the same as.” Consider the following simple sentence as an example: The number 2 solves the equation x3-8=0, but not the equation sin(x)=5. Similarly, equations that are typeset in a centered, “display mode” should conclude with punctuation as appropriate.
6. The report should have clear structure, including (at least) an introduction in which the problem is described in simple terms, a section in which the mathematical model of the is developed/discussed, a section in which technical methods are applied to the model in order to arrive at a solution, and a summary of results.
7. Take your report to the RIT Writing Commons in the Wallace Library for a critical eye toward writing style. (Take this document with you.) Appointments can be made at

<https://www.rit.edu/academicaffairs/writing/schedule-appointment>

## Figures, Tables, Equations, and References

1. All figures and tables should be numbered and have captions.
2. Refer to figures and tables by their numbers (e.g., “Figure 2 shows…”).
3. If you refer to an equation, that equation should be numbered in the right margin, and you should refer to it by its number (e.g., “equation (3) tells us that the relationship…”). Equations that are not referenced in the narrative should not be labeled.
4. References should be cited in a bibliography (including help from individuals).

## Mathematical Detail

1. Explicitly demonstrate mathematical ideas and methods if they are a specific to the course you are taking, and support the reader through this work with your narrative.
2. Variables and parameters should be defined before you use or discuss them.
3. Physical quantities should have associated units.
4. Although you can use appendices to house particularly long calculations and MATLAB scripts, avoid asking the reader to flip back and forth repeatedly. The body of your report should be largely self-contained.

## Mathematical Model

1. If you have used a mathematical model to describe a real-world phenomenon or situation, one section of your report should identify and discuss the choices that were made when designing model. Your discussion should include recognition of strengths and weaknesses in the model design, informed by a comparison of your results to other sources and/or data (when such resources exist).