Why projects? Research\(^1\) has shown that students in project oriented courses do better than students in courses that do not have projects. These students learn and integrate the material in a deeper fashion, get better grades on exams, and as a rule take more mathematics courses. Projects are harder than homework problems and demand quite a bit of thought and consultation with your fellow group members and with your instructors before you attempt to commit your ideas to word processing. Even though you will/may use a computer for some parts of a project, please remember that your brain is your most important computational device.

Here are some suggestions:

1. Start as soon as you get the assignment. Read the entire project to see what it’s all about. Don’t worry too much about details the first time through. Then, read the project through carefully and see if there are unfamiliar words or concepts. Even if you understand the project, do not assume that it is easy.

2. Prepare the solution in the form of a written report. Your paper does not need to be long, but it should be clearly written and include graphs and illustrations if necessary. The paper must begin with a clear description of the problem, written for a mathematically literate reader who knows nothing about the project!!

3. Work every day on the project. It will be reasonable if you do it this way, and impossible if you begin it the night before it is due. Schedule group meetings early, and make sure that all members of the group come to the meeting.

4. Come talk to either the GTA or to me if you get stuck. But come to see us expecting only that we’ll help you focus on what you are having difficulty with, not that we’ll tell you how to do the work.

5. Be sure to spell check your paper. Make sure that it is written using proper grammar.

6. Be sure to backup your computer work and to save changes often.

7. Each student will submit (the day the project is due) an evaluation of her/his own role in the group and the contribution of the others in the group. I will treat the information on these evaluations as strictly confidential and I will destroy the evaluations after I read them. This evaluation is worth 10% of the project.

8. I have given a project grade of 0 to students who do not participate in the project.

9. Remember – I always test the material from group projects on exams. If your fellow group members understand the details of the project via mutual work and help, you will understand the project better, too, and your grade will improve.

10. Talk to me immediately if there are problems with your group!

\(^1\)Many of the ideas expressed here are lifted from the book Student Research Projects in Calculus, by Cohen, Gaughan, Knoebel, Kutz and Pengelley, and published by the Mathematical Association of America. This text describes their work and presents a large number of projects given to Calculus students at the University of New Mexico.