Presentation Guidelines

Presentations will be graded according to the following rubric:

- ✓+ Well-rehearsed and well-delivered. The solution is mostly correct and the student is aware of potential weak points in the argument.
- ✓ The student has grasped and communicated the main ideas of the argument.
- ✓– Incomplete or incorrect. The student has not made a serious effort to understand and/or present the solution.

It is acceptable to present a solution which is incomplete, so long as you have given the problem serious thought. In this case, you may use your presentation to discuss your various approaches to the problem. You will be rewarded for being courageous and sharing your creative ideas! In fact, this is often how mathematical progress is made—by bringing carefully thought-out partial solutions to one's peers for comment and critique.

As the presenter: Your goal is to make the ideas of the proof clear to the entire class, not simply to show me that you have completed the problem. A secondary goal is to get feedback for how you could improve the clarity of your exposition.

- You may either present live over Zoom or pre-record your presentation.
- You must use some sort of visual aid, so that you can write or display mathematics as you speak.
- Your presentation should be well-rehearsed and professional. Before presenting, you should write your solution down in detail and go over the major ideas and transitions so that you can make your proof clear to others. It is a good idea to do a practice run or two!
- Feel welcome to personalize your presentation. Mathematics is a human endeavor, and it should not feel sterile. If you found something especially fun or cool or difficult, please share that with us!
- Be ready to answer questions regarding your work to the best of your ability.

As the audience: Your goal is to understand the proof the presenter provides by giving your complete attention to them and asking questions when necessary. Your secondary goal is to provide polite and respectful feedback regarding the structure or exposition of their proof.

- You are encouraged to ask questions of the presenter, but you should do so in a professional and courteous manner.
- Do not interrupt the speaker. If you have comments, questions, etc., please save these for the end of the presentation or use the hand-raising feature in Zoom.
- Be encouraging of the presenter! If you have a polite suggestion to make, you could also offer some positive feedback as well.
- Here are some examples of respectful ways to begin a question/comment:
  - "I like how you explained _____, but could you explain _____ again?"
  - "I see you observed _____ early on in the proof. Could you highlight where that is used later in the proof?"
  - "I like how you did _____. I found another approach ...."
  - "I understand what you are doing and agree with some of it, but I think your reasoning breaks down at this step because ..."
  - "What I appreciate about your solution is _____, which enabled you to ...."

Portfolio Guidelines

Your submissions for the class portfolio must be typed using LaTeX. This is a program that is designed for typing math; many things that are hard to do in other word processing programs are easy to do in LaTeX.

We will be using a platform called Overleaf (`overleaf.com`) to type up our portfolio. This enables easy sharing of files, and does not require that you install LaTeX on your computer.

For each of your portfolio submissions, start by opening a copy of the class template. Change `x.yz` to your problem number, add your name in the place of `author` and replace `date of final version` with the current date. Then add the problem statement and your proof!

Some things to know about LaTeX:

- In contrast to most popular word processing programs, LaTeX is not a WYSIWYG (what you see is what you get) editor. Rather, you will type everything into a `.tex` file, which is essentially a plain text file. The program LaTeX then **compiles** your `.tex` file, interpreting your typed commands and outputting a clean `.pdf` file.
- Whenever you are typing math symbols, they should be surrounded by dollar signs. For example, if you type

  ```
  $\gcd(a_1,a^3)$
  ```

  then you will get the expression $\gcd(a_1, a^3)$, displayed in-line as it is here.
- To display an equation, you surround it with the symbols `\[` and `\]`. For example, to display the equation

  $$5 \equiv 2 \mod 3$$

  you should type

  ```
  \[ 5 \equiv 2 \mod 3 \]
  ```
- You will notice that mathematics in LaTeX is mostly encoded in various **commands**, which are signaled by a backslash \. There will be a bit of a learning curve as you grow accustomed to these. However, there are several useful resources available online. One that I find particularly helpful is Detexify, at

  `http://detexify.kirelabs.org/`

  which allows you to search for TeX symbols by sketching them.
- To get the "blackboard-style" symbols $\mathbb{N}$ for the natural numbers or $\mathbb{Z}$ for the integers, type

  `$\mathbb{N}$` or `$\mathbb{Z}$`

  respectively. You'll notice that these commands are a bit cumbersome. Since they get used all the time, most people choose to define **macros**, or shortcuts, for these types of commands. For instance, in the template `.tex` file, you may produce $\mathbb{N}$ or $\mathbb{Z}$ by typing the much simpler commands

  `$\NN$` or `$\ZZ$`

  respectively. See if you can figure out how to define your own macros by looking at my code!
- You can add **comments** to your `.tex` file by using the symbol `%`. Comments are ignored by LaTeX during compiling, and therefore do not appear in the `.pdf` file. Comments can be used to explain the utility of certain pieces of your code (especially useful when collaborating with others on one `.tex` file!), as a delimiter to help with organization, or as a tool in de-bugging.