Math 366 Final Essay Guidelines

Mary Radcliffe

due 12 May 2017

First steps

1. Choose a topic or mathematician (not Erdős or Van der Waerden) that we have discussed during the course that you enjoyed or found interesting.
2. Do some independent reading/research about this topic/mathematician. If you need help getting started, come see me and I'll give you some appropriate references.
3. Place the topic/mathematician you are interested in into full historical context. Why was it/he/she important or relevant? How did the work of mathematicians at the time relate to your topic/how did the work of your mathematician fit in the larger historical context?

The essay. Your essay should include the following features.

1. For introduction: start with a full mathematical explanation of the topic you have chosen/short bio of your mathematician. This should include definitions of main terminology, and an explanation of why this topic is important. This should be pretty formal mathematically.
2. If a topic: talk about historical significance, the mathematicians that worked on this, and what we know about this topic today. You may focus on a particular theorem if you think it is appropriate.
3. If a mathematician: talk about their work, and how it fits in the broader context of combinatorics. What important theorems have they written? Why are they important?
4. Talk about why this topic/mathematician appeals to you. What about it is interesting? How do you think this concept/person has contributed to the study of mathematics? This is squishy. It doesn't have to be as mathematically precise as the previous items.

Presentation.

1. Your essay should be typeset using a standard mathematical typesetter. Most mathematicians prefer LaTeX, but in other fields (some applied math, statistics, mathematically adjacent fields), Microsoft Word's mathematical typesetting is also an accepted standard. If you have other preferred typesetting programs, ask me about them. See here for a nice intro to LaTeX. You are more than welcome to copy my preamble if you wish, although many nice templates are out there for the taking.
2. I believe it will be virtually impossible to complete the assigned tasks in less than 3 pages. I also believe it will be entirely unnecessary to write more than 6 pages. Officially, there is no required length. Use as much space as you need to do this assignment, and do it well.

3. You should have a bibliography indicating the sources from which you are pulling your main ideas. Unlike most people, I WILL accept Wikipedia as a source, as most of the mathematics on Wikipedia is excellent. I will NOT accept ONLY Wikipedia as a source. For the theorem you choose, you should cite the person who originally proved it, and their original paper. I highly recommend using BibTeX, as the citation code is copy-pasteable from Google Scholar.

Scoring. Scores will be assigned on a scale of 0-20 points. Roughly, this is what your score should look like.

- 20 points: Essay demonstrates well-developed understanding of concept, or well-researched info on the mathematician involved. Mathematics is precise, symbols are clearly defined and correctly manipulated. Minimal typos.
- 16-19 points: Essay demonstrates reasonable understanding of concept. Mathematics is occasionally fuzzy; symbols not always clearly defined. Minimal typos.
- 12-15 points: Concept not clearly explained, or presented with a slightly incoherent understanding, or research on mathematician incomplete. Mathematics is often fuzzy and occasionally wrong. More than minimal typos, minimal inconsistencies.
- 8-11 points: Concept not clearly explained or is explained incoherently, research poor. Essay does not meet standards of presentation or writing guidelines. Symbols are incorrectly defined, incorrectly used, or undefined. More than minimal typos or inconsistencies.
- < 8 points: Nobody should score in this range unless they literally do not complete this assignment.