Math 303 Papers Apr 14, 2008

The second project in Math 303 will be a short paper on a major result in the history of math. This is an individual project. The paper is due by 7 PM on May 5.

Find a result that was a significant step in the development of mathematics that is not covered in our textbook. This will typically be a theorem. But it does not have to be a theorem. For example, one of the chapters in Journey through Genius is on Newton's invention of calculus.

Your paper should discuss the mathematical context of the result, why it was of interest, any prior attempts at it and progress made, how it was finally accomplished, and why it should be considered a major result. It should have substantial mathematical content. Depending on what result you choose, you may not be able to present a complete and detailed proof. Some proofs are too long or are beyond the level of this class. In any case, your paper should present the mathematics that was developed for this result in some detail.

You may find that your paper is more colorful if you provide some historical context and a brief biography of the author(s) of your result. The chapters in Journey through Genius can serve as a good model for your paper and the right balance between math and history. Your paper is of course not required to be as detailed or long as those chapters.

You could be creative with your choice of topic. For example, you could also pick a significant open problem (see e.g. www.claymath.org/millennium), which has prompted the development of interesting mathematics. If you are unsure about the appropriateness of your choice, ask me.

This paper will account for 5% of your grade in this class. You will be graded on how thoroughly you research your topic, how well you understand it, and how accurate, clear, and well-written your paper is (both mathematically and historically!).

While this is not a writing class, I expect you to use proper academic language and correct grammar. Please, carefully reference your sources and be careful not to plagiarize!

I am not too picky about how long your paper is. Use as much space as you need to say what you want to say. 2-5 single-spaced pages (with 11-point font) would be a good guideline. I doubt you can say enough in less than 2 pages. If you need more than 5 pages to do a good job, go ahead.

Your main resource for this project is the library. You can use the internet too, but as a serious scholar, you should carefully verify the reliability of the information you find there.

Here is the suggested schedule:

Apr 14–20: Do initial research to find a good topic

Apr 21–27: Conduct detailed research into the solution/development and history of your chosen result

Apr 28–May 4: Write and revise paper

You have three weeks to do it. If you spend the first two weeks doing nothing and start looking for a topic only then, you are likely to find that you don't have enough time left to do a good job.

You don't need to submit anything before May 5, or clear your topic with me, but I encourage you to be in touch and talk to me about your choice. You don't want to spend precious time doing research on a topic which turns out to be uninteresting or beyond your reach.