Assignment:

This semester you will be required to write two (2) 10-15-page papers. These are "internal" pages, not including the Title page (title, name, course, date), and a Works Cited/References/Bibliography page as the last page. The first paper is due by mid-semester, and the second at the end of the class.

All topics must be approved by me beforehand. The First Paper must cover a pre-1650 topic (before the invention of the Calculus). The Second Paper must cover a Post-1650 topic (after the invention of the Calculus). Of course these dates are flexible. Try to find a topic of particular interest to yourself, perhaps a mathematical idea you’ve always wanted to explore, the work of a mathematician that interests you, or a topic you might be asked to teach someday. In any case, you want to tell a good story, with historical mathematics as the feature.

Use original sources (in translation of course) as the core of your papers, meaning, "Learn from the Masters!" Look at the references and bibliographies of your sources for further related sources. This is detective work; follow the clues, stick to the truth. A paper must have a carefully explicated proof or other mathematical argument somewhere in it, possibly several. This will depend on your topic of course. Some papers will consist entirely of one "classic" proof or mathematical argument, others will contain a sequence of smaller proofs. Discuss this with me. Do not be too broad. Restrict to a few well-chosen and thoroughly explicated theorems, or arguments. The analysis of mathematics should be the core of your paper. A biographical or historical lead-in and your ending conclusion are usually just the frame, but there is quite a bit of flexibility here.

For each paper you must turn in 1-3 DRAFTs. These drafts will not be graded, but I will return them to you promptly with extensive written comments, and discuss these with you in person. More than one draft is recommended. (If at least two drafts are not received before the final paper, 20% of your grade on the paper will be forfeited.) Submitting many drafts improves the paper immeasurably. A useful draft should encompass at least half to three-quarters of the paper. The drafts and papers must be typed with a word-processor. Draw or write by hand any mathematics or pictures if necessary, though digital tools are many, and recommended for a professional appearance of both the mathematics and the pictures. Include in the draft a list of at least 3 references you are looking at. Don't give a draft "for show". If there's nothing there, it is not acceptable. Always return the previous marked-up draft with the current draft, so I can recognize changes.

The level of discourse in your paper should be at least that of a student at this 400 (senior) level of mathematics. The notation of our primary texts, Katz and Dunham, and whatever I present in class should be the notation you use in your papers. Any additional notation should be standard. Ask me if you have doubts. Within your paper please refer to your numbered Bibliography references by numbers within square brackets, such as: [8] or, [17, p. 242]. References to books should always have page references. A paper should usually have at least 5 references, although this may differ from topic to topic, among them original sources in some form. Quoting actual documents for illustration or flavor is a good idea. Your paper should be double-spaced, with 1 inch margins, and 12 pt. font or smaller.