MATH 1136 HISTORY PAPER

GENERAL GUIDELINES

Content Guidelines.
- Address some or all of the sample questions for your topic.
- Add at least one new question and answer it.
- Include at least one element of global history which occurred at about the same time as the topic you write about.

Technical Guidelines.
- Papers are due electronically in the Carmen dropbox on Wednesday, March 23.
- Papers should be 600 – 800 words.
- Use at least 3 sources and give proper attribution/citation.
- At most 1 of your sources may be an encyclopedia.
- Use a standard citation format consistently. You may choose which format to use.

SUGGESTED TOPICS

- Eratosthenes' method for determining the circumference of the earth. See p. 455 of our text for reference to an activity and a childrens' book
- History of the SI units (aka the metric system). What were the geopolitical motivations for this system? How were these motivations related to contemporary philosophy? Who were the major leaders, and what was involved in creating this system?
- The use of perspective in painting and drawing. When and how did this begin, what were early responses to its use? What kinds of geometry are involved in perspective drawing?
- Life and times of Cavalieri. The Italian mathematician Cavalieri is credited with the theory of shearing in 2 and 3 dimensions. Describe his background, contributions, historical context, contemporaries, and legacy.
- Compass and straightedge constructions. This was a way that Greeks investigated geometry. Why were these so interesting? What constructions are or are not possible (and who figured these questions out)?
- Archimedes and circle area or sphere volume. Why was he interested in these? How did they influence other work? Include historical context.
- Brahmagupta and pi. What did Indian mathematicians know about pi? Why were they interested? How did this influence other work? Include historical context.
- Euler and the Knigsberg Bridges. Describe Euler's background and the history of this problem. How did Euler contribute? What mathematical advances are related to this recreational problem?
- Geometry in the Hopewell culture. Describe some of the geometric constructions from the time of the Hopewell culture. Explain the mathematical and cultural value of these sites.

RUBRIC

Papers will be evaluated on the following criteria:

Content.
- Complete: addresses topic and related questions
- Reliable: cites diverse reliable references
- Coherent: main points are well-explained, make sense
- Interesting: mathematically, historically, and/or personally

Technical.
- Grammatical: spelling, punctuation, word use, etc.
- Formatting: is consistent, not distracting

The scale for each criterion will be:

3 = Great!
2 = Good; maybe minor issues
1 = OK; needs improvement in this area
0 = Major problems or not present

The content criteria will count for 80% of the points, and the technical criteria for 20%.

SUGGESTED REFERENCES

I assume most of you will begin with an internet search, and I think that makes sense. Use an encyclopeda or other internet reference as a starting point to find other, more detailed references.

Wikipedia is often a great place to start, but definitely don't stop there. The MacTutor History of Mathematics archive is another good encyclopedic starting point: `http://www-history.mcs.st-and.ac.uk/`

I strongly recommend that you make use of our library resources, either in Newark or Columbus. The librarians in Newark are constantly asking me if there are more ways they can be helpful to students, so I'm sure they'd love to talk with you! I have no doubt that the librarians in Columbus feel the same way :)