Class 18: **Monday March 22**

TITLE Mathematics from other parts of the world
CURRENT READING: Katz, §11
NEXT READING: Katz, §12-13

Paper #2 Topic due Friday March 26th (in class). Your **topic submission** should include a short description of the mathematical topic, why you think it is important or interesting enough to write about, and the citation of one source. Your paper should discuss the discovery, development and distinctiveness of the topic you have selected.

SUMMARY
This chapter discusses the mathematical development of other (non-European) areas of the world before we spend the rest of the class discussing the significant contributions of European mathematicians to the development of modern mathematics.

14th Century: Who Knew What?

GroupWork

Review pages 365-368 and connect which sections of the world (China, India, "Islam," Europe) knew which areas of mathematics by the 14th century:

Trigonometry	China
Analytic Geometry	India
Algebra	Islam
Linear Congruences	Europe
Pascal's Triangle	Other
Calculus	

Why Did Modern Mathematics Develop in Europe?
What do you think about Victor Katz's argument for why modern mathematics developed in Europe?

The Mayans

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15 ▬▬▬	16 •/▬▬▬	17 ••/▬▬▬	18 •••/▬▬▬	19 ••••/▬▬▬
20 •/⊖	21 •/•	22 •/••	23 •/•••	24 •/••••
25 •/▬	26 •/•/▬	27 •/••/▬	28 •/•••/▬	29 •/••••/▬

Mayan positional number system

The Mayan civilization had a written language and a sophisticated civilization that flourished between the 3rd and 9th centuries in primarily what we call central America nowadays. Their system of numeration was mainly a place value system with 20 as the base, but also used a grouping system with base 5. The *third* place in the number system would represent 360 (instead of 400) and then every place after that would represent 20 times the place before. The place value system was vertical with higher values at the top.

Example

Thus the Mayans would be represented the number 777 by:

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The Incas
The Incas lived about 2000 miles south of the Mayans, in what is now known as Peru from around 1400 to 1560. Unfortunately, it is believed that they did not have a written language but they did have a logical numbering system using colored knots and cords on objects which are called *quipus*. These quipus used a base-10 place-value system. There's a picture on page 373 of Katz.