Ma 330 project I Information

The first project requires the students to organize into groups of 3 to 4 students and select a topic.

We list titles of a few projects done in the past, but this is for inspiration only! You should look for something new!

The chosen topic and brief outline and intended scope should be reported to sathaye@uky.edu

You may also meet with me in person and seek advice.

If different groups end up choosing identical topics, then we will discuss changing the projects.

The project is expected to be typed 15-20 pages (single spaced). It should be properly composed with title, abstract, introduction and discussion with properly cited references. All material that is simply copied from other sources should be presented as a quote, distinct from your own thoughts and conclusions. The project should end with a summary and thoughts for further investigation, if possible.

Table 1

A list of old projects in Ma 330 (in no specific order)

calculus, fractals, trig, use of astronomy	Newton's Contributions
History of Geom. Concepts of length and are, uses in construction	Derivatives: Origins and applications
Fractal, special numbers pi, golden ratio, physics constants	Chinese math. Number systems
origin of numbers and their development (L'Hôpital's rule)	Special numbers
ancient uses of geometry	L'Hôpital's rule
Interesting topics for HS students, differences in mathematics between Europe and India, origin of theorems (particularly number theory)	Geometry in Ancient Cultures
Mathematical thinking, effect of number systems	Applications of Mayan number systems

Euclid's elements, Pythagoras Thm. , Newton! (Interest in teaching).	Golden Ratio
Fractals, geometric shapes - saddle, cones, Pythagoras, trig, notations, symbols, special numbers (pi, zero), calculus, astronomy	Newton's method
Interested in Teach for America, African/Hispanic contributions, Pythagoras, useful Geometry topics	Fractals
Creation of numbers and zero, levels of infinity	Golden ratio, numbers in nature
Origin of trig. and quad. Equations.	Babylonian Numbers systems
geometry in architecture (Greek, roman), fractals	History of calculus
Egypt, Babylon, Fibonacci	Chaos Theory
math in physical world, number systems, Egyptian geometry	Development of units
Notations (esp. in calculus)	Egyptian uses of Math.
combinatorics and probability, number theory, Taylor series	Notations (esp. in calculus)
Egypt, calculus history	Konigsberg Bridges
Fractals, Algebra(ancient/modern), Power series,	Mayan Numbers
Old geometry and constructions - various cultures	Fractals, Algebra(ancient/modern), Power series,
Number theory, primes, uses of primes, irrationals	Shapes of the past
Fibonacci	Calculating primes
Advancement and application of math through astronomy	Fibonacci

Notations, uses of geometry, special numbers, number systems

Series and their details

Standards of measurement

Pythagorean Theorem

History of Infinity

Math in Ancient Architecture

Babylonian Number System