

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 you are free to choose your own topic.

The chosen topic and brief outline and intended scope should be reported to

Robert Davis davis.robert@uky.edu

You may also meet with him 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 area, 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

Euclid's elements, Pythagoras Thm. , Newton! (Interest in teaching).

Fractals, geometric shapes - saddle, cones, Pythagoras, trig, notations, symbols, special numbers (pi, zero), calculus, astronomy

Interested in Teach for America, African/Hispanic contributions, Pythagoras, useful Geometry topics

Creation of numbers and zero, levels of infinity

Origin of trig. and quad. Equations.

geometry in architecture (Greek, roman), fractals

Egypt, Babylon, Fibonacci

math in physical world, number systems, Egyptian geometry

Notations (esp. in calculus)

combinatorics and probability, number theory, Taylor series

Egypt, calculus history

Fractals, Algebra(ancient/modern), Power series, ...

Old geometry and constructions - various cultures

Number theory, primes, uses of primes, irrationals

Fibonacci

Applications of Mayan number systems

Golden Ratio

Newton's method

Fractals

Golden ratio, numbers in nature

Babylonian Numbers systems

History of calculus

Chaos Theory

Development of units

Egyptian uses of Math.

Notations (esp. in calculus)

Konigsberg Bridges

Mayan Numbers

Fractals, Algebra(ancient/modern), Power series, ...

Shapes of the past

Calculating primes

Advancement and application of math through astronomy

Notations, uses of geometry, special numbers, number systems

Series and their details

Fibonacci

Standards of measurement

Pythagorean Theorem

History of Infinity

Math in Ancient Architecture

Babylonian Number System