

## 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](mailto: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 deadline for your proposals is 2/5/16.

The project is expected to be between 15-20 single spaced pages.

It must be typed and properly formatted, complete with title, abstract, introduction, narrative, conclusions and references.

Using Web resources is permitted, but they must be cited. Also, it is necessary to search some of the references from the web pages directly. You should make an effort to verify if the opinions expressed in your source are justified. Be sure to include a discussion of why the source is trustworthy.

I have listed some of the old project ideas. I would love to see some new topics!

calculus, fractals, trig, use of astronomy

History of Geom. Concepts of length and area, uses in construction

Special numbers  $\pi$ ,  $e$ , golden ratio, physics constants

Origin of numbers and their development, Calculation techniques

Recent Mathematical Theorems and their importance

Important Theorems of Calculus/Analysis

Important Theorems of Algebra

Prime numbers and problems/theorems about them

Ancient uses of geometry, why and how

Interesting topics for HS students, differences in mathematics between Europe and India, origin of theorems (particularly number theory)

Famous theorems (choose one or two) and their authors

Euclid's elements, Pythagoras Thm. , Newton's work, Euler's work

Recent Mathematicians and their work (Consult the history site)

Creation of numbers and zero, levels of infinity

Origin of trig and its uses in application

Chinese contribution to Mathematics

Uses of prime numbers

Advancement and application of math through astronomy

Number theory, primes, uses of primes, irrationals

Important Mathematicians of XXX century

History of Calculus/Analysis

History of determinants

History of Series