

PreCalculus Final Project 2006: The Power of Numbers

Choose a topic about a number or type of number. Everyone must pick a different topic and sign up. First one signed up wins!

All presentations will include: Historical background. How/who discovered/invented? What are they used for? How are they computed/derived? Are there relationships with other types or special numbers? For classifying numbers: How many total combinations are there? How long will they last? What if we need more?

Potential Topics:

Types of numbers: fractals (Mandelbrot Set, Sierpinski numbers), infinity, prime, perfect, modular, triangular, square, etc

Special numbers: e , π , ϕ , i

Classifying numbers: UPC, ISBN, zip codes, SSN, credit card numbers; telephone numbers

Measurement numbers: Richter scale, decibel scale, temperature scales

Ones you've never heard of: cardinal numbers; ordinal numbers; quaternions; octernions; surreal numbers; matrices (real and/or complex entries); fuzzy real and/or complex numbers; p-adic numbers; non-standard real and/or complex numbers

Sources

Math Forum, the best starting point for any mathematical searches, www.mathforum.org

Sources I have in the classroom:

The Book of Numbers, John H Conway and Richard K Guy, 1996

Book of Numbers, Adam Spencer, 2004

Wonders of Numbers, Clifford A Pickover, 2001

Mathematics in Everyday Things, William C Vergera, 1959

The Penguin Dictionary of Curious and Interesting Numbers, David Wells, 1997

Reading the Numbers, Mary Blocksma, 1989

The Number Devil: A Mathematical Adventure, Hans Magnus Enzensberger, 1997

Your task

- I. At the beginning of your presentation, hand in a 1 – 2 page summary paper that includes a bibliography.
- II. Present an oral presentation to the class (5 – 10 minutes.) Tell us about any historical background for your topic. How/who discovered/invented? Describe the mathematics involved in your topic. What are they used for? How are they computed/derived? Are there relationships with other types or special numbers? For classifying numbers: How many total combinations are there? How long will they last? What if we need more?
- III. Make sure you use a visual aid, for example, a poster, a Power Point presentation, web site(s), or a handout for your topic. Power Point presentations or web sites are preferred to posters because everyone can see them. Posters must be organized such that the document camera can be used to see/read the display. Be sure to use the rubric as a checklist to prepare your presentation.
- IV. Copy any PP presentations to the PreCalculus folder on the laptop.

Precalculus Final Project 2006

Name _____

Score _____

Topic

Comments

Criteria	
Topic chosen is about a number(s)	
Historical background	
Quality visual aid(s): shows time, effort and creativity	
Vocabulary use: correct terminology (new vocab is a plus)	
Complexity: you should demonstrate that you learned something new about mathematics (MS math is a minus, HS math is a check, something we've never done in HS is a plus)	
Mathematics: you need to explain/discuss the mathematics that is involved in your topic. What are they used for? How are they computed/derived? Are there relationships with other types or special numbers? For classifying numbers: How many total combinations are there? How long will they last? What if we need more?	
Expertise: learn enough about your topic to answer questions from an ignorant audience (your classmates and me), especially be able to answer questions from your classmates.	
Class Presentation: organized, clear, interesting voice and manner	
Originality: everyone must choose a different topic or a different aspect of a topic	
Paper: neat, clear summary with details as needed, watch spelling! Accurate list of sources.	
Timeliness: you will lose points if you are not prepared or absent.	

95 is baseline score—met the standard in each category. If you want a higher score, be prepared to impress me!