

PreCalculus Final Project 2003:

Topic Choose a curve, research its history, sketch different variations on it, find out about the effect these parameters have on the curve.

Sources

CRC Handbook of Mathematical Curves and Surfaces, David H. von Seggern, 1990. I have a copy of this book available for overnight checkout. It is also available at the SLU Library or through inter-library loan.

The Famous Curve Index <http://www-gap.dcs.st-and.ac.uk/~history/Curves/Curves.html> is a good place to start, but it is written for mathematicians – very high level explanations. After you find a curve you like, do a google search on its name. High school sites are easier to understand than college sites.

Hawaii HS page on geometry curves, especially conics, but also other curves:

<http://www.k12.hi.us/~mathappl/MAch3Curves.html>

Fibonacci Spiral: <http://www.mcs.surrey.ac.uk/Personal/R.Knott/Fibonacci/fibnat.html#spiral>

Graphing Resource

I recommend the use of WinPlot, a graphing software program for the computer. It is free and can be downloaded to a PC computer from <http://www.exeter.edu/~rparris/winplot.html> [Note, you must have WinZip, available from www.winzip.com, to ‘unzip’ the software download.] We will do a demonstration curve in class. A short tutorial for the program is attached.

Present orally to the class. Explain the curve, its equation, how to graph it, how its parameters affect it, its history. Visual aid must show the curve and variations! Read the rubric for specifics.

Write a 1 – 2 page summary paper, must include sketches of the curve.

Due date: June 5th, approx. Exact date for each student will be determined the last week of May.

Precalculus Final Project 2003

Name _____

Score _____

Topic _____

0	-	√-	√	√+	+
Not done	Below standard on a major point or a major mistake	Below standard on a minor point or a small mistake	Meets standard, all areas correctly performed	Above standard on a minor point or in small way	Above standard on a major point or in an impressive way
-9	-5	-3	0	+3	+5

Criteria	
Appropriateness and originality of topic: everyone must choose a different curve	
Mathematics: you need to explain/discuss the mathematics involved in your curve's equation, how to graph it	
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)	
History of the curve: Who "discovered/invented" it? When? How? Where did it get its name?	
Variations: How does changing the parameters change the curve? What are related curves?	
Expertise: learn enough about your topic to answer questions from an ignorant audience (your class and me)	
Class Presentation: organized, clear, interesting voice and manner, originality is a plus!	
Quality visual aid(s): shows time, effort and creativity	
Vocabulary use in presentation and paper: correct terminology (new vocab is a plus)	
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.	