Student Presentations

Modeling Trigonometric Relationships with Geometer's Sketchpad™

presented by

Jason Gregersen and Joseph Kriegl

Using Geometer's Sketchpad, we have created a program that models the trigonometric functions. The program helps demonstrate some of the key characteristics of the trig functions, as well as their relation to the unit circle, and the intuitiveness of some of the basic trig identities. During the presentation we will demonstrate the construction of the model, highlighting some of the features and tools of Geometer's Sketchpad, its application in the field of education, and how this knowledge can be expanded to model related concepts. We will also make use of SnagIt capture software as a means to give instruction.

This presentation is highly recommended for those interested in Geometer's Sketchpad, or serious about math education.

Exploring Hyperbolic Geometry Using the Poincare Disk Model in Geometer's Sketchpad™

presented by

Stephanie Gage and Rachel Hunt

Euclid's five axioms constitute the building blocks of Euclidean Geometry and shape the way that we perceive and use geometry. Controversy over his fifth postulate has lead to the discovery of non-Euclidean geometry and the discovery that by changing one axiom slightly, leads to new forms of geometry that are just as consistent.

This presentation will show how High School math teachers can use the Poincare Disk Model, a Non-Euclidean model, to discuss the importance of axioms in Geometry. Using Geometer's Sketchpad and Euclid's five postulates we will model the similarities and differences between Euclidean and Non-Euclidean Geometries.

Mathematics and Computer Science Colloquium and Seminar Series