Trigonometry
Graphing Using Geogebra

Purpose – the student will practice graphing the basic trig functions using the Geogebra utility, gaining skill in using the computer as well as in graphing trig functions.

Task:

Produce a geogebra drawing which contains the following features.

- Graphs for sine, cosine, tangent, secant, cosecant, and cotangent, of the general form $f(x) = A \sin(B(x-C)) + D$, where A, B, C, and D are values expressed using the slider feature within Geogebra and each of the six graphs is toggled off and on using a check box. [I demo this in class]. An example is posted online at http://www.johndilsaver.com

- Display the equation $f(x) = A \sin(B(x-C)) + D$ for each of the trig functions on the geogebra screen with the values of A, B, C, and D from the sliders being displayed in the equation.

- Include basic info about for which quadrants each function is positive and negative.

- Draw the unit circle, use a radius vector to sweep out angle theta. Animate the drawing, color code the segments for $\cos(\theta)$, $\sin(\theta)$, and $\tan(\theta)$, have a segment slide along the $\sin(\theta)$ curve as the angle θ is traced out in the unit circle. Your instructor demo's this in class.

- Be sure to save your work where you can access it later. Instructions for posting it online will be forthcoming.