Week 9 Lab

1) Download the Geogebra Webstart program. Link is located on the website, http://www.shodor.org/~bhudnutt/ITT/week9.html -> Geogebra, Webstart. Download the Geogebra sketch also linked from the website: Triangle Sketch. We will walk through how to re-create this sketch in class but if you are having problems then use the downloaded sketch for the actual assignment.

2) Create 3 points using the point tool:

3) Connect the points using the segment tool: (click on the little drop down arrow in the lower right hand corner of the tool and select the line segment to have it draw segments instead of lines).

4) Note the name of the points and the line segments. The points are referred to by capital letters and the segments are referred to by lower case. In this example, A, B, and C are the points and a, b, and c are the line segments.
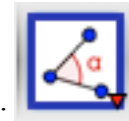
5) Find the measure of the angle at point B by clicking on the angle tool: . To have the program give you the angle measure, you must *click on the three points that form the angle in a counterclockwise direction*, in this case from C to B to A. (Otherwise the program will give you the measure of the exterior angle.) Angles are labeled with lower case Greek letters, in this case the letter alpha: α

6) In the input text box at the bottom of the screen, type a^2+b^2 and hit return. This will calculate the value of the sum of the squares of the two line segments, a and b. In the left hand column, under the heading, "dependent objects" this value will be labeled d. If you mouse over it, it will show you the calculated value.

7) In the input text box at the bottom of the screen, type c^2 to calculate the square of the length of the line segment, c.

8) Click on the pointer tool: to be able to click and drag on the objects you've created.

9) Move the points, A, B, and C around to create the angle α to be 90°. Record your values in the table provided.

10) Move the points again to change the lengths of segments a, b, and c but keep angle α to be 90°. Record your values in the table. Repeat this process until you have the table completed with different values for a, b, and c each time.

11) What pattern do you notice?

	a	b	c	a^2+b^2	c^2
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					