Investigating the Tangent Ratio   Name: _____
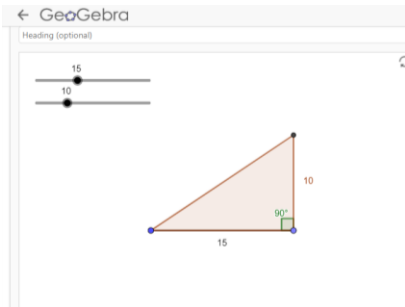
<u>Assignment</u>: Use an interactive web tool to investigate how the acute angle of a triangle is related to the lengths of the sides of the triangle.

1. Use an internet browser to go to the following URL:

https://ggbm.at/nSw9uEbU
LOAD FLASH PLAYER ON SITE

2. Familiarize yourself with the web tool as you answer these questions.

    a. Change the height of the right triangle by dragging the Slider marked "Height" up and down. What happens to the measure of the acute angle when you ***increase*** the <u>height</u> of the triangle?

    b. Change the Base Length of the right triangle by dragging the slider marked "Base Length". What happens to the measure of the acute angle when you *increase* the <u>BASE</u> of the triangle?

    c. Change the base and height of the triangle together by dragging the vertex marked left and right. How can you change the ratio of the sides?

    d. How can you change the values of height and base to have the SAME ratio of sides?

    e.. Set the base of the triangle at 10 units and ADJUST the height so that the angle is $35°$. Note the value of the ratio of sides,
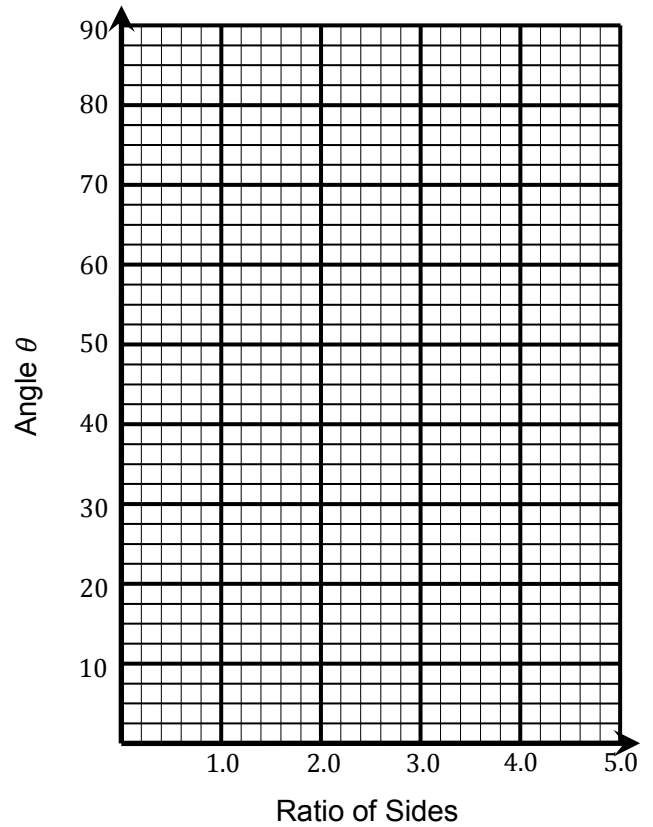
	Base Length	Height
Ratio of Sides @ 35° =		

Now double the height. Does the Angle double?

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3. Use the internet tool to complete the tables and graphs below. Then answer the question:

How is the acute angle of a right triangle related to the lengths of the legs?

Base	Height	Ratio	Angle θ
10	2		
10	4		
10	6		
10	8		
10	10		
1	1		
1	2		
1	3		
1	4		
1	5		

Angle θ

Ratio of Sides

Use the Second App to fill in the chart and graph the results.

Angle θ	Base Length	Height	Ratio
0°			
15°			
30°			
45°			
60°			
75°			
89°			