
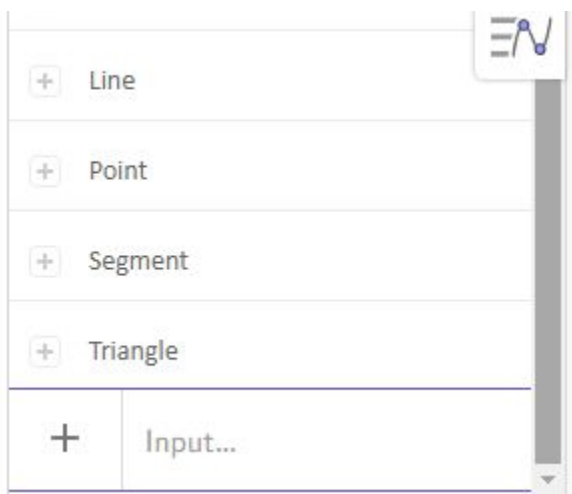


Geometry


Geogebra:- Right Triangle Trigonometry



1. Measure the length of segments by using the measure tool:  and selecting the words opposite, adjacent, and hyp on the diagram.
2. Determine the ratios $\frac{\text{opposite}}{\text{hyp}}$, $\frac{\text{adjacent}}{\text{hyp}}$, and $\frac{\text{opposite}}{\text{adjacent}}$ by:



- a. go to the calculating feature on the left side
- b. type this text: = opposite / hyp
- c. type: = adjacent / hyp
- d. type: = opposite / adjacent

3. Find these measures in the calculating column. Using the pointer tool  , grab point C and change the angles of the triangle.

Question 1 (questions are found in Geogebra): Do the ratio of the sides stay the same or change when the angles change?

4. Now grab angle A and change the size of the triangle. The angles should stay the same.

Question 2: Triangles who have congruent corresponding angles are_____.

Question 3: Do the ratio of the sides stay the same or change when the angles stay the same?

5. Let's now look at the trig functions of $\angle B$ and see how they relate to the side lengths and ratios.



- Go to the calculating feature on the left side
 - type: = $\tan(B)$
 - type: = $\sin(B)$
 - type: = $\cos(B)$
6. Find these measures in the calculating column. Using the point tool, grab point C and change the angles of the triangle. You should see these 3 values somewhere else in the calculating column.

These are the definitions of three of the trig functions. Through similar right triangles, we can predict the ratio of the sides given an acute angle. Discover these relationships:

Question 4: $\sin(\angle) = \frac{\textit{opposite}}{\textit{hyp}}$, $\frac{\textit{adjacent}}{\textit{hyp}}$, or $\frac{\textit{opposite}}{\textit{adjacent}}$?

Question 5: $\cos(\angle) = \frac{\textit{opposite}}{\textit{hyp}}$, $\frac{\textit{adjacent}}{\textit{hyp}}$, or $\frac{\textit{opposite}}{\textit{adjacent}}$?

Question 6: $\tan(\angle) = \frac{\textit{opposite}}{\textit{hyp}}$, $\frac{\textit{adjacent}}{\textit{hyp}}$, or $\frac{\textit{opposite}}{\textit{adjacent}}$?

Write these definitions in your notebook.