



Right Triangle Definitions of Trigonometric Functions

Let θ be an acute angle of a right triangle. The six trigonometric functions of θ are defined as follows:

$$\begin{array}{lll} \sin \theta = \frac{\text{opposite}}{\text{hypotenuse}} & \cos \theta = \frac{\text{adjacent}}{\text{hypotenuse}} & \tan \theta = \frac{\text{opposite}}{\text{adjacent}} \\ \csc \theta = \frac{\text{hypotenuse}}{\text{opposite}} & \sec \theta = \frac{\text{hypotenuse}}{\text{adjacent}} & \cot \theta = \frac{\text{adjacent}}{\text{opposite}} \end{array}$$

Note that the ratios in the second row are reciprocals of the ratios in the first row.

$$\csc \theta = \frac{1}{\sin \theta} \qquad \sec \theta = \frac{1}{\cos \theta} \qquad \cot \theta = \frac{1}{\tan \theta}$$