



# Math Virtual Learning

## Precalculus with Trigonometry

May 18, 2020



Precalculus with Trigonometry  
Lesson: May 18th, 2020

**Objective/Learning Target:**

Students will review right triangle trigonometric functions and their reciprocal functions.

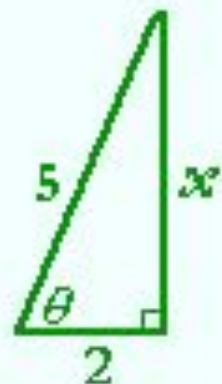
This week we will be reviewing some of the introductory skills of trigonometry. Today we will be reexamining right triangle trig ratios and reciprocal trig ratios.

**Let's Get Started!**

Watch Video: [Evaluating the six trig functions of an angle](#)

Primary Trig Ratios	Reciprocal Trig Ratios
$\sin\theta = \frac{\textit{opposite}}{\textit{hypotenuse}}$	$\textit{cosecant} = \frac{1}{\sin\theta} = \frac{\textit{hypotenuse}}{\textit{opposite}}$
$\cos\theta = \frac{\textit{adjacent}}{\textit{hypotenuse}}$	$\textit{secant} = \frac{1}{\cos\theta} = \frac{\textit{hypotenuse}}{\textit{adjacent}}$
$\tan\theta = \frac{\textit{opposite}}{\textit{adjacent}}$	$\textit{cotangent} = \frac{1}{\tan} = \frac{\textit{adjacent}}{\textit{opposite}}$

**Problem 1.** In a right triangle,  $\cos \theta = \frac{2}{5}$ . Sketch the triangle and evaluate  $\sin \theta$ .



$$x^2 + 2^2 = 5^2$$

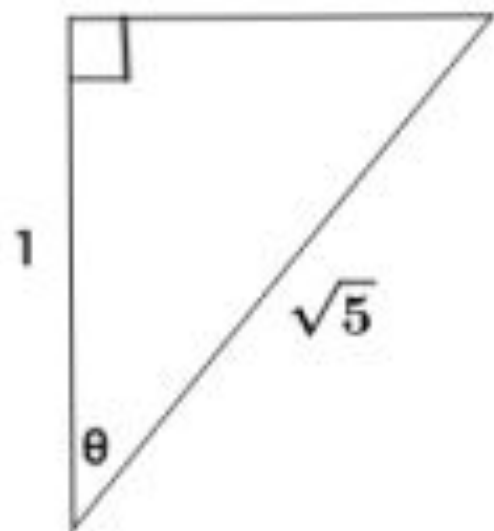
$$x^2 = 25 - 4 = 21$$

$$x = \sqrt{21}$$

Therefore,

$$\sin \theta = \frac{\sqrt{21}}{5}$$

Use the triangle below to find the six trig ratios



$$\sin \theta = \frac{2}{\sqrt{5}} = \frac{2\sqrt{5}}{5}$$

$$\csc \theta = \frac{\sqrt{5}}{2}$$

$$\cos \theta = \frac{1}{\sqrt{5}} = \frac{\sqrt{5}}{5}$$

$$\sec \theta = \frac{\sqrt{5}}{1} = \sqrt{5}$$

$$\tan \theta = \frac{2}{1} = 2$$

$$\cot \theta = \frac{1}{2}$$

**Practice:** Find the following:

1.  $\sin A$

2.  $\cos A$

3.  $\tan A$

4.  $\csc A$

5.  $\sec A$

6.  $\cot A$

7.  $\sin B$

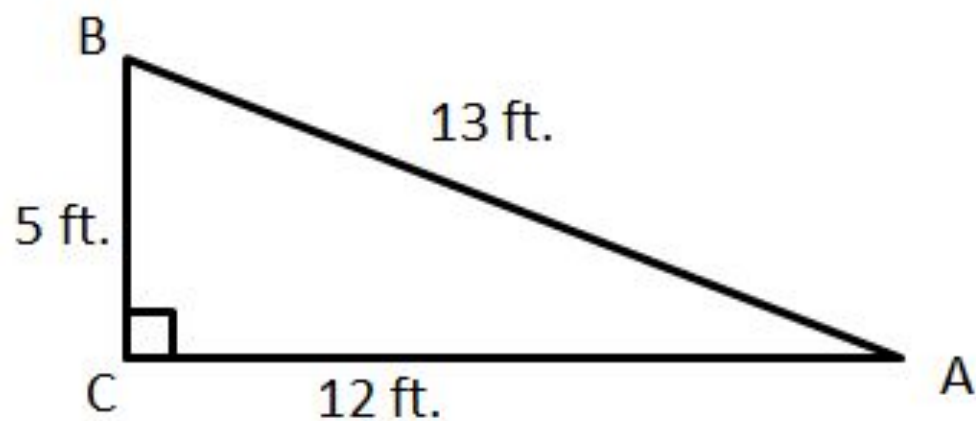
8.  $\cos B$

9.  $\tan B$

10.  $\csc B$

11.  $\sec B$

12.  $\cot B$



## Answers:

$$1) \frac{5}{13} \quad 2) \frac{12}{13} \quad 3) \frac{5}{12} \quad 4) \frac{13}{5} \quad 5) \frac{13}{12} \quad 6) \frac{12}{5}$$

$$7) \frac{12}{13} \quad 8) \frac{5}{13} \quad 9) \frac{12}{5} \quad 10) \frac{13}{12} \quad 11) \frac{13}{5} \quad 12) \frac{5}{12}$$



Additional Resource Videos:

[Intro to Trig Ratios](#)

[Reciprocal Trig Ratios](#)

Additional Practice:

[Trig Ratios Practice - Kuta](#)

[Reciprocal Trig Ratios - Khan Academy](#)