

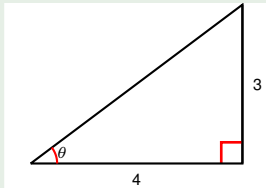
Precalculus

Compute the trigonometric functions in a right angle triangle, part 1

Todor Milev

2019

Example

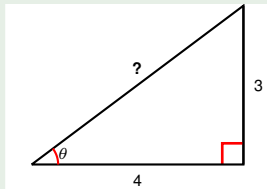


³ Let the angle θ be as indicated in the figure. Find the values of the six trigonometric functions of θ .

$$\sin \theta = \quad \cos \theta = \quad \tan \theta =$$

$$\csc \theta = \quad \sec \theta = \quad \cot \theta =$$

Example



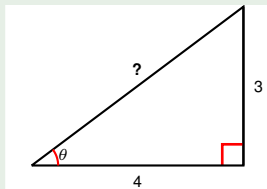
³ Let the angle θ be as indicated in the figure. Find the values of the six trigonometric functions of θ .

To find the trigonometric functions, we need to know the length of the hypotenuse.

$$\sin \theta = \quad \cos \theta = \quad \tan \theta =$$

$$\csc \theta = \quad \sec \theta = \quad \cot \theta =$$

Example



³ Let the angle θ be as indicated in the figure. Find the values of the six trigonometric functions of θ .

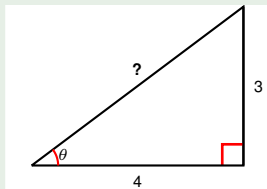
To find the trigonometric functions, we need to know the length of the hypotenuse.

hypotenuse = ?

$$\sin \theta = \quad \cos \theta = \quad \tan \theta =$$

$$\csc \theta = \quad \sec \theta = \quad \cot \theta =$$

Example



³ Let the angle θ be as indicated in the figure. Find the values of the six trigonometric functions of θ .

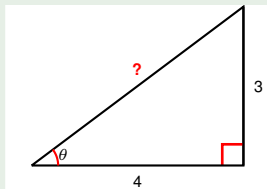
To find the trigonometric functions, we need to know the length of the hypotenuse.

$$\text{hypotenuse} = \sqrt{4^2 + 3^2}$$

$$\sin \theta = \quad \cos \theta = \quad \tan \theta =$$

$$\csc \theta = \quad \sec \theta = \quad \cot \theta =$$

Example



³ Let the angle θ be as indicated in the figure. Find the values of the six trigonometric functions of θ .

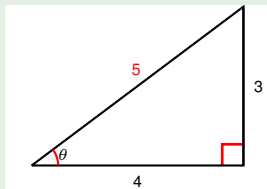
To find the trigonometric functions, we need to know the length of the hypotenuse.

$$\text{hypotenuse} = \sqrt{4^2 + 3^2} = \sqrt{25}$$

$$\sin \theta = \quad \cos \theta = \quad \tan \theta =$$

$$\csc \theta = \quad \sec \theta = \quad \cot \theta =$$

Example



³ Let the angle θ be as indicated in the figure. Find the values of the six trigonometric functions of θ .

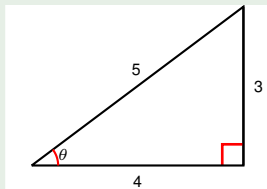
To find the trigonometric functions, we need to know the length of the hypotenuse.

$$\text{hypotenuse} = \sqrt{4^2 + 3^2} = \sqrt{25} = 5.$$

$$\sin \theta = \quad \cos \theta = \quad \tan \theta =$$

$$\csc \theta = \quad \sec \theta = \quad \cot \theta =$$

Example



³ Let the angle θ be as indicated in the figure. Find the values of the six trigonometric functions of θ .

To find the trigonometric functions, we need to know the length of the hypotenuse.

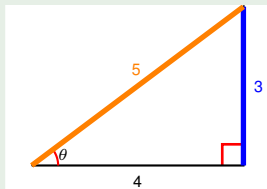
$$\text{hypotenuse} = \sqrt{4^2 + 3^2} = \sqrt{25} = 5.$$

Using the right angle triangle ratio interpretations of the trig functions, we can compute:

$$\sin \theta = ? \quad \cos \theta = \quad \tan \theta =$$

$$\csc \theta = \quad \sec \theta = \quad \cot \theta =$$

Example



Let the angle θ be as indicated in the figure. Find the values of the six trigonometric functions of θ .

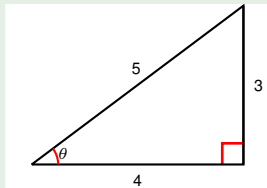
To find the trigonometric functions, we need to know the length of the hypotenuse.

$$\text{hypotenuse} = \sqrt{4^2 + 3^2} = \sqrt{25} = 5.$$

Using the right angle triangle ratio interpretations of the trig functions, we can compute:

$$\begin{array}{lll} \sin \theta = \frac{3}{5} & \cos \theta = & \tan \theta = \\ \csc \theta = & \sec \theta = & \cot \theta = \end{array}$$

Example



Let the angle θ be as indicated in the figure. Find the values of the six trigonometric functions of θ .

To find the trigonometric functions, we need to know the length of the hypotenuse.

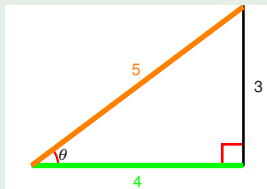
$$\text{hypotenuse} = \sqrt{4^2 + 3^2} = \sqrt{25} = 5.$$

Using the right angle triangle ratio interpretations of the trig functions, we can compute:

$$\sin \theta = \frac{3}{5} \quad \cos \theta = ? \quad \tan \theta =$$

$$\csc \theta = \quad \sec \theta = \quad \cot \theta =$$

Example



Let the angle θ be as indicated in the figure. Find the values of the six trigonometric functions of θ .

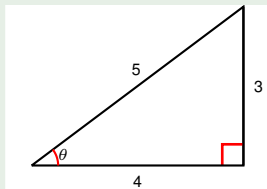
To find the trigonometric functions, we need to know the length of the hypotenuse.

$$\text{hypotenuse} = \sqrt{4^2 + 3^2} = \sqrt{25} = 5.$$

Using the right angle triangle ratio interpretations of the trig functions, we can compute:

$$\begin{array}{lll} \sin \theta = \frac{3}{5} & \cos \theta = \frac{4}{5} & \tan \theta = \\ \csc \theta = & \sec \theta = & \cot \theta = \end{array}$$

Example



Let the angle θ be as indicated in the figure. Find the values of the six trigonometric functions of θ .

To find the trigonometric functions, we need to know the length of the hypotenuse.

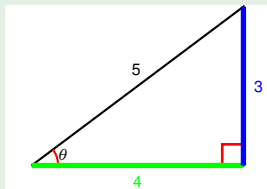
$$\text{hypotenuse} = \sqrt{4^2 + 3^2} = \sqrt{25} = 5.$$

Using the right angle triangle ratio interpretations of the trig functions, we can compute:

$$\sin \theta = \frac{3}{5} \quad \cos \theta = \frac{4}{5} \quad \tan \theta = ?$$

$$\csc \theta = \quad \sec \theta = \quad \cot \theta =$$

Example



Let the angle θ be as indicated in the figure. Find the values of the six trigonometric functions of θ .

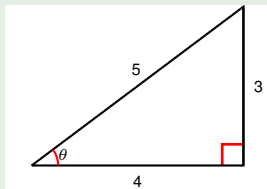
To find the trigonometric functions, we need to know the length of the hypotenuse.

$$\text{hypotenuse} = \sqrt{4^2 + 3^2} = \sqrt{25} = 5.$$

Using the right angle triangle ratio interpretations of the trig functions, we can compute:

$$\begin{array}{lll} \sin \theta = \frac{3}{5} & \cos \theta = \frac{4}{5} & \tan \theta = \frac{3}{4} \\ \csc \theta = & \sec \theta = & \cot \theta = \end{array}$$

Example



Let the angle θ be as indicated in the figure. Find the values of the six trigonometric functions of θ .

To find the trigonometric functions, we need to know the length of the hypotenuse.

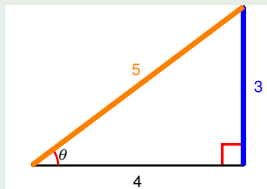
$$\text{hypotenuse} = \sqrt{4^2 + 3^2} = \sqrt{25} = 5.$$

Using the right angle triangle ratio interpretations of the trig functions, we can compute:

$$\sin \theta = \frac{3}{5} \quad \cos \theta = \frac{4}{5} \quad \tan \theta = \frac{3}{4}$$

$$\text{csc } \theta = ? \quad \sec \theta = \quad \cot \theta =$$

Example



Let the angle θ be as indicated in the figure. Find the values of the six trigonometric functions of θ .

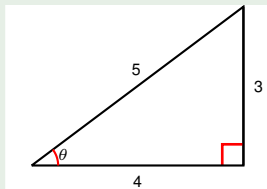
To find the trigonometric functions, we need to know the length of the hypotenuse.

$$\text{hypotenuse} = \sqrt{4^2 + 3^2} = \sqrt{25} = 5.$$

Using the right angle triangle ratio interpretations of the trig functions, we can compute:

$$\begin{array}{lll} \sin \theta = \frac{3}{5} & \cos \theta = \frac{4}{5} & \tan \theta = \frac{3}{4} \\ \text{csc } \theta = \frac{5}{3} & \sec \theta = & \cot \theta = \end{array}$$

Example



Let the angle θ be as indicated in the figure. Find the values of the six trigonometric functions of θ .

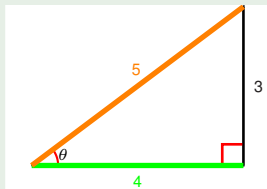
To find the trigonometric functions, we need to know the length of the hypotenuse.

$$\text{hypotenuse} = \sqrt{4^2 + 3^2} = \sqrt{25} = 5.$$

Using the right angle triangle ratio interpretations of the trig functions, we can compute:

$$\begin{array}{lll} \sin \theta = \frac{3}{5} & \cos \theta = \frac{4}{5} & \tan \theta = \frac{3}{4} \\ \csc \theta = \frac{5}{3} & \sec \theta = ? & \cot \theta = \end{array}$$

Example



³ Let the angle θ be as indicated in the figure. Find the values of the six trigonometric functions of θ .

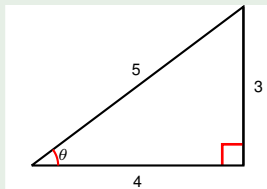
To find the trigonometric functions, we need to know the length of the hypotenuse.

$$\text{hypotenuse} = \sqrt{4^2 + 3^2} = \sqrt{25} = 5.$$

Using the right angle triangle ratio interpretations of the trig functions, we can compute:

$$\begin{array}{lll} \sin \theta = \frac{3}{5} & \cos \theta = \frac{4}{5} & \tan \theta = \frac{3}{4} \\ \csc \theta = \frac{5}{3} & \sec \theta = \frac{5}{4} & \cot \theta = \end{array}$$

Example



Let the angle θ be as indicated in the figure. Find the values of the six trigonometric functions of θ .

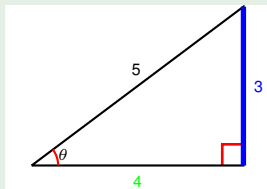
To find the trigonometric functions, we need to know the length of the hypotenuse.

$$\text{hypotenuse} = \sqrt{4^2 + 3^2} = \sqrt{25} = 5.$$

Using the right angle triangle ratio interpretations of the trig functions, we can compute:

$$\begin{array}{lll} \sin \theta = \frac{3}{5} & \cos \theta = \frac{4}{5} & \tan \theta = \frac{3}{4} \\ \csc \theta = \frac{5}{3} & \sec \theta = \frac{5}{4} & \cot \theta = ? \end{array}$$

Example



Let the angle θ be as indicated in the figure. Find the values of the six trigonometric functions of θ .

To find the trigonometric functions, we need to know the length of the hypotenuse.

$$\text{hypotenuse} = \sqrt{4^2 + 3^2} = \sqrt{25} = 5.$$

Using the right angle triangle ratio interpretations of the trig functions, we can compute:

$$\begin{array}{lll} \sin \theta = \frac{3}{5} & \cos \theta = \frac{4}{5} & \tan \theta = \frac{3}{4} \\ \csc \theta = \frac{5}{3} & \sec \theta = \frac{5}{4} & \cot \theta = \frac{4}{3} \end{array}$$