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

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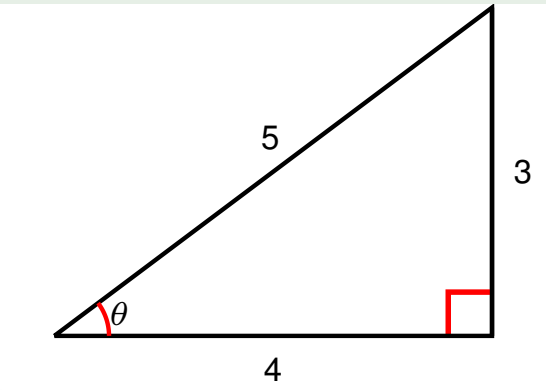
Example



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:

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