

## Precalculus

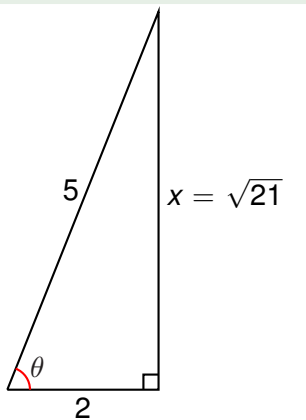
# Compute the trigonometric functions in a right angle triangle, part 2

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## Example

If  $\cos \theta = \frac{2}{5}$  and  $0 < \theta < \frac{\pi}{2}$ , find the other five trigonometric functions of  $\theta$ .



- Label the hypotenuse with length 5 and the adjacent side with length 2.
- Pythagorean theorem:  $x^2 + 2^2 = 5^2$ .
- Therefore  $x^2 = 21$ , so  $x = \sqrt{21}$ .

$$\sin \theta = \frac{\sqrt{21}}{5} \quad \tan \theta = \frac{\sqrt{21}}{2}$$

$$\csc \theta = \frac{5}{\sqrt{21}} \quad \sec \theta = \frac{5}{2}$$

$$\cot \theta = \frac{2}{\sqrt{21}}$$