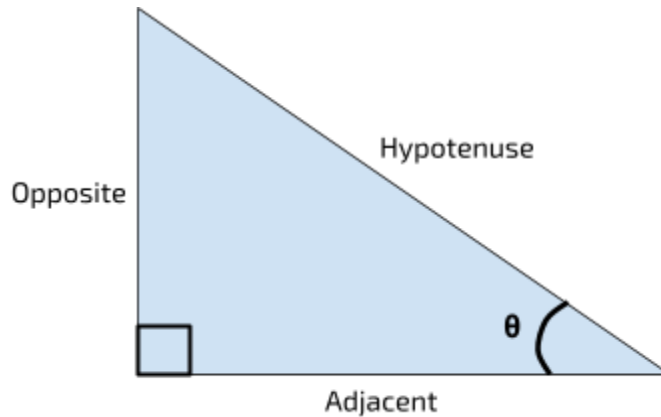# Introduction to Trigonometric Functions

What are the 3 basic trigonometric functions?
The 3 basic trigonometric(aka "trig") functions are **sine**, **cosine**, and **tangent**

Sine	Cosine	Tangent
$sin(\theta) = \frac{Opposite}{Hypotenuse}$	$cos(\theta) = \frac{Adjacent}{Hypotenuse}$	$tan(\theta) = \frac{Opposite}{Adjacent}$

One common mnemonic to remember the 3 trig functions is SOH-CAH-TOA
SOH - **S**in is **O**pposite over **H**ypotenuse
CAH - **C**os is **A**djacent over **H**ypotenuse
TOA - **T**an is **O**pposite over **A**djacent
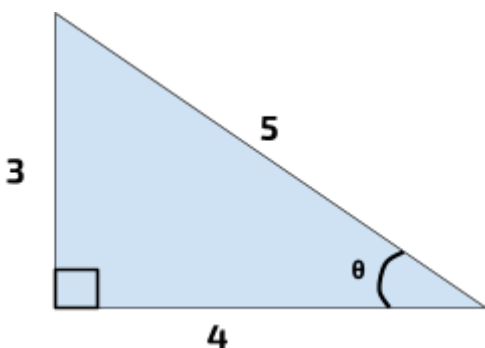
How do you tell which side is which?
Hypotenuse – Always the side opposite to the right angle
Opposite – The side opposite to the given angle
Adjacent – The side next to the given angle that is not the hypotenuse
Note: Depending on the angle given, the opposite and adjacent sides can change

Example:

$$sin(\theta) = \frac{3}{5}$$

$$cos(\theta) = \frac{4}{5}$$

$$tan(\theta) = \frac{3}{4}$$