Trigonometry – Introduction to Trigonometry

Trigonometry is the study of the relationships of sides and angles in triangles.

In this unit, we will deal with right angle triangles as well as non-right angle triangles.

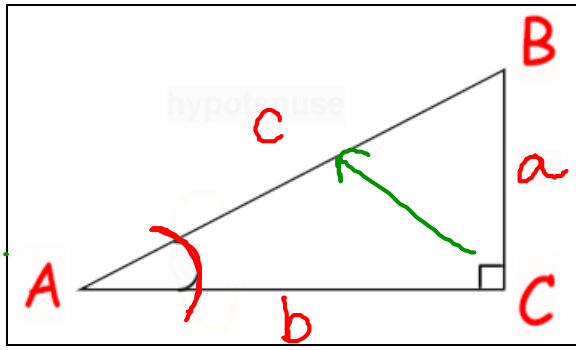
Right Triangles

When we are exploring triangles, we have what is called a reference angle.

We use a reference angle so that we can easily talk about different sides of a triangle without getting confused.

Once we have chosen our reference angle, we refer to the three sides of the triangle as the opposite side, the adjacent side and the hypotenuse.

Given the triangle below, label the opposite side, the adjacent side and the hypotenuse if angle A is the reference angle.



Opposite Side: a

Adjacent Side: b

Hypotenuse: c

The Ratios

When we work with right triangles we often want to solve for sides and angles. To do this, we use the three trigonometric ratios: SIN, COS and TAN.

We can remember the role of each using: SOH CAH TOA

$\sin(angle) = \frac{\text{opposite}}{\text{hypotenuse}}$	$\cos(angle) = \frac{\text{adjacent}}{\text{hypotenuse}}$	$\tan(angle) = \frac{\text{opposite}}{\text{adjacent}}$