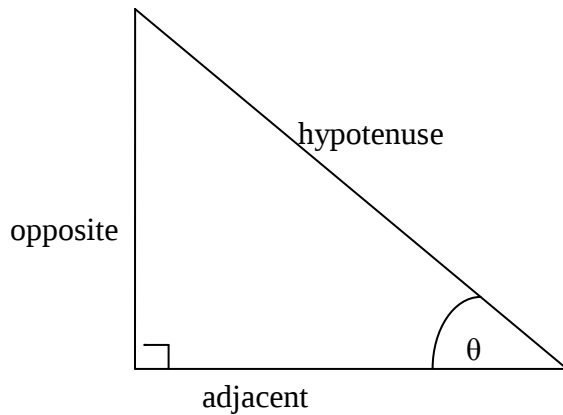


CHAPTER 01

TRIGONOMETRY

Trigonometry is a branch of mathematics that deals with angles, triangles and the trigonometric functions which have to do with the ratios between the sides of a right angled triangle. It is one of the most practical branches of mathematics.



The subject matter of trigonometry is based on six trigonometric functions. We introduce the first three namely Sine, Cosine and Tangent functions. These are going to help us in calculating the sides and angles of a right angled triangle.

$$(i) \quad \sin \theta = \frac{\text{opposite}}{\text{hypotenuse}}$$

$$(ii) \quad \cos \theta = \frac{\text{adjacent}}{\text{hypotenuse}}$$

$$(iii) \quad \tan \theta = \frac{\text{opposite}}{\text{adjacent}}$$

The other three additional trigonometric functions are Cosecant, Secant and Cotangent.

$$(i) \quad \operatorname{cosec} \theta = \frac{1}{\sin \theta} = \frac{\text{hypotenuse}}{\text{opposite}}$$

$$(ii) \quad \sec \theta = \frac{1}{\cos \theta} = \frac{\text{hypotenuse}}{\text{adjacent}}$$