**CLASS X**

**MATHEMATICS**

**Introduction To Trigonometry**

**HANDOUT(Module 1 of 3)**

Trigonometry is the science of relationships between the sides and angles of a right-angled triangle.

Trigonometric Ratios: Ratios of sides of right triangle are called trigonometric ratios.
Consider triangle ABC right-angled at B. These ratios are always defined with respect to acute angle ‘A’ or angle ‘C.

If one of the trigonometric ratios of an acute angle is known, the remaining trigonometric ratios of an angle can be easily determined.



Consider a right triangle ABC, right-angled at B. Once we have identified the sides, we can define six t-Ratios with respect to the sides.

 Sine of ∠A = Sin A $ = \frac{PERPENDICULAR }{HYPOTENUSE}$ =$ \frac{BC}{AC}$

Cosine of ∠A = Cos A =$ \frac{ADJACENT}{HYPOTENUSE}=$ $\frac{ AB}{AC}$

Tangent of ∠A = Tan A =$ \frac{BC}{AB}= \frac{PERPENDICULAR}{ADJACENT}= \frac{Sin A }{ Cos A }$

Cosecant of ∠A = Cosec of ∠A =$ \frac{1}{Sin A }$ =$ \frac{AC}{BC} = \frac{HYPOTENUSE}{PERPENDICULAR}$

Secant of ∠A = Sec of ∠A =$ \frac{1}{Cos A }$ =$ \frac{AC}{AB} = \frac{HYPOTENUSE}{ADJACENT}$

Cotangent of ∠A = Cot A =$ \frac{AB}{BC}= \frac{ADJACENT}{PERPENDICULAR}= \frac{Cos A }{ Sin A }$