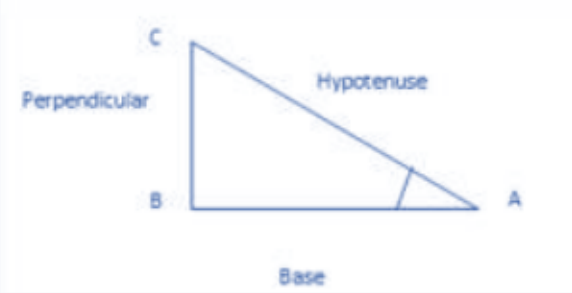
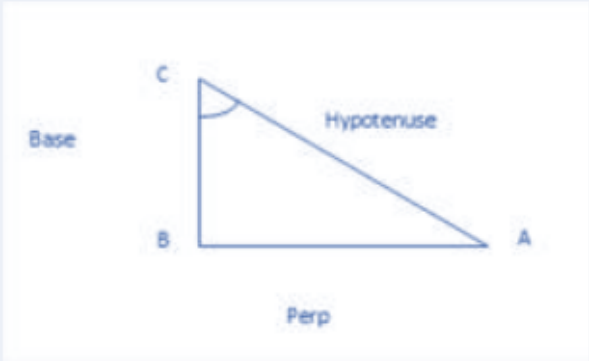


TRIGONOMETRY

S.no	Terms	Descriptions
1	What is Trigonometry	<p>Trigonometry from Greek trigōnon, "triangle" and metron, "measure") is a branch of mathematics that studies relationships involving lengths and angles of triangles. The field emerged during the 3rd century BC from applications of geometry to astronomical studies.</p> <p>Trigonometry is most simply associated with planar right angle triangles (each of which is a two-dimensional triangle with one angle equal to 90 degrees). The applicability to non-right-angle triangles exists, but, since any non-right-angle triangle (on a flat plane) can be bisected to create two right-angle triangles, most problems can be reduced to calculations on right-angle triangles. Thus the majority of applications relate to right-angle triangles</p>
2	Trigonometric Ratio's	<p>In a right angle triangle ABC where $B=90^\circ$</p>  <p>We can define following term for angle A</p> <p>Base : Side adjacent to angle</p> <p>Perpendicular: Side Opposite of angle</p> <p>Hypotenuse: Side opposite to right angle</p> <p>We can define the trigonometric ratios for angle A as</p> <p>$\sin A = \text{Perpendicular/Hypotenuse} = BC/AC$</p> <p>$\operatorname{cosec} A = \text{Hypotenuse/Perpendicular} = AC/BC$</p> <p>$\cos A = \text{Base/Hypotenuse} = AB/AC$</p> <p>$\sec A = \text{Hypotenuse/Base} = AC/AB$</p> <p>$\tan A = \text{Perpendicular/Base} = BC/AB$</p> <p>$\cot A = \text{Base/Perpendicular} = AB/BC$</p> <p>Notice that each ratio in the right-hand column is the inverse, or the reciprocal, of the ratio in the left-hand column.</p>



3	Reciprocal of functions	<p>The reciprocal of $\sin A$ is $\operatorname{cosec} A$; and vice-versa.</p> <p>The reciprocal of $\cos A$ is $\sec A$</p> <p>And the reciprocal of $\tan A$ is $\cot A$</p> <p>These are valid for acute angles.</p> <p>We can define $\tan A = \sin A / \cos A$</p> <p>And $\cot A = \cos A / \sin A$</p>
4	Value of \sin and \cos	Is always less 1
5	Trigonometric ratios from another angle	<p>We can define the trigonometric ratios for angle C as</p>  <p> $\sin C = \text{Perpendicular} / \text{Hypotenuse} = AB / AC$ $\operatorname{cosec} C = \text{Hypotenuse} / \text{Perpendicular} = AC / AB$ $\cos C = \text{Base} / \text{Hypotenuse} = BC / AC$ $\sec C = \text{Hypotenuse} / \text{Base} = AC / BC$ $\tan A = \text{Perpendicular} / \text{Base} = AB / BC$ $\cot A = \text{Base} / \text{Perpendicular} = BC / AB$ </p>
6	Trigonometric ratios of complimentary angles	<p>$\sin (90-A) = \cos(A)$</p> <p>$\cos(90-A) = \sin A$</p> <p>$\tan(90-A) = \cot A$</p> <p>$\sec(90-A) = \operatorname{cosec} A$</p> <p>$\operatorname{Cosec} (90-A) = \sec A$</p> <p>$\cot(90- A) = \tan A$</p>
7	Trigonometric identities	<p>$\sin^2 A + \cos^2 A = 1$</p> <p>$1 + \tan^2 A = \sec^2 A$</p> <p>$1 + \cot^2 A = \operatorname{cosec}^2 A$</p>

Trigonometric Ratios of common angles:

We can find the values of trigonometric ratio's various angle

Angles(A)	SinA	Cos A	TanA	Cosec A	Sec A	Cot A
0°	0	1	0	Not defined	1	Not defined
30°	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{3}}$	2	$\frac{2}{\sqrt{3}}$	$\sqrt{3}$
45°	$\frac{1}{\sqrt{2}}$	$\frac{1}{\sqrt{2}}$	1	$\sqrt{2}$	$\sqrt{2}$	1
60°	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$\sqrt{3}$	$\frac{2}{\sqrt{3}}$	2	$\frac{1}{\sqrt{3}}$
90°	1	0	Not defined	1	Not defined	0

