TRINITY COLLEGE FOR WOMEN
NAMAKKAL
Department of Mathematics

BRIDGE MATHEMATICS
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Trignometric functions

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Trigonometric Functions

The trigonometric functions are real functions which relate an angle of a right angled triangle to ratios of two side lengths.

They are widely used in all sciences that are related to geometry such as navigation, solid mechanics celestial mechanics , geodesy and many others.

They are among the simplest periodic functions.

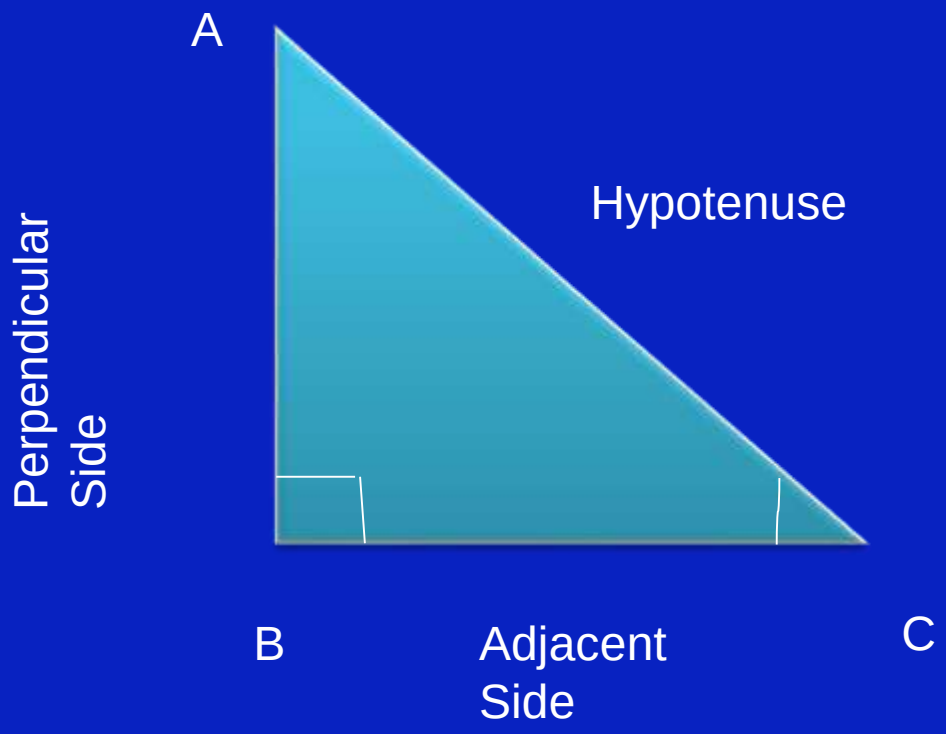
Trigonometric Ratios

The most common versions of these abbrevations are

Sin for sine
Cos for cosine
Tan for tangent
Sec for secant
Csc or cosec for cosecant
Cot for cotangent

To Find Trigonometric Ratios

consider a right-angled triangle, right-angled at B.



With respect to angle c , the ratios of trigonometry are given as

Sine: Sine of an angle is defined as the ratio of the opposite (perpendicular side) to that angle to the hypotenuse.

i.e., sin C= AB/AC

Cosine: Cosine of an angle is defined as the ratio of the side adjacent to that angle of hypotenuse.

i.e., Cos C = BC / AC

Tangent: Tangent of an angle is defined as the ratio of the side opposite to that angle to the side adjacent to that angle.

i.e., tan C = AB / AC = sin C / cos C

Cosecant: Cosecant is a multiplicative inverse of sine

i.e., cosec C = 1/ sin C
= AC / AB

Secant: Secant is a multiplicative inverse of cosine

i.e., sec C = 1/ cos C

= AC / BC

Cotangent : Cotangent is the multiplicative inverse of the tangent

i.e., cot C = 1/tan C

= BC / AB

Trigonometric Ratios Table

The trigonometric ratios for some specific angles such as 0^o , 30^o ,45^o ,60^o and 90 which are commonly used in mathematical calculations.

Angle	0º	30º	45º	60º	90º
Sin C	0	1/2	$1/\sqrt{2}$	`$\sqrt{3}/2$	1
Cos C	1	$\sqrt{3}/2$	$1/\sqrt{2}$	1/2	0
Tan C	0	$1/\sqrt{3}$	1	$\sqrt{3}$	∞
Cosec C	∞	$\sqrt{3}$	1	$2/\sqrt{3}$	0
Sec C	1	$2/\sqrt{3}$	$\sqrt{2}$	2	∞
Cot C	∞	$\sqrt{3}$	$\sqrt{2}$	$1/\sqrt{3}$	1

THANK YOU

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