

Angle - Angle is a measure of rotation of a given ray about its initial point.

If rotation is clockwise, then angle is negative
 If rotation is anticlockwise, then angle is positive.

Angle is measured via two ways:-

1) Degree - If a rotation from the initial side to terminal side is $\left(\frac{1}{360}\right)^{\text{th}}$ of a

revolution, the angle is said to have a measure of one degree i.e. 1° . A degree is divided into 60 min & a minute is divided into 60s.

$$1^\circ = 60' , 1' = 60''$$

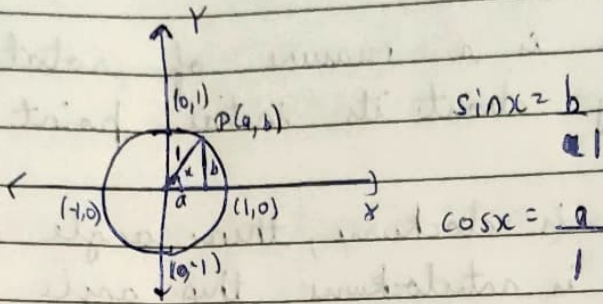
2) Radian - Angle subtended at the centre by an arc of length 1 unit in a unit circle is said to have a measure of 1 radian.

$$\text{eg: } 1 \text{ rad, } 0.05 \text{ rad}$$

Relation between Degree & Radian -

$$\boxed{\text{Radian} = \frac{\pi}{180} \times \text{Degree}}$$

Trigonometric Functions -



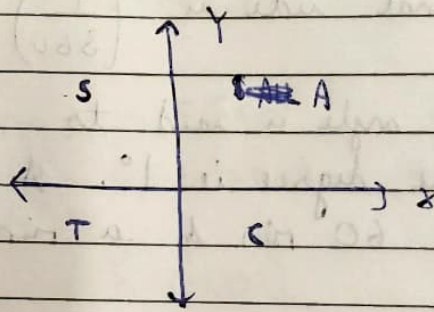
$$\sin x = \frac{b}{a}$$

$$\cos x = \frac{a}{a}$$

$\angle x = +ve$: anticlockwise

Also, $a^2 + b^2 = 1$

$$\sin^2 x + \cos^2 x = 1$$



A - all +ve

S = sine +ve (or cosec ; cosec = 1/sine)

T = tan +ve (or cot ; cot = 1/tan)

C = cos +ve (or sec ; sec = 1/cos)

Tip: Learn as "After School to Coaching"
A S T C

Domain & Range of trigonometric function -

Function	Domain	Range
$\sin x$	\mathbb{R}	$[-1, 1]$
$\cos x$	\mathbb{R}	$[-1, 1]$
$\tan x$	$\mathbb{R} - (2n+1)\pi/2$	\mathbb{R}
$\cot x$	$\mathbb{R} - n\pi$	\mathbb{R}

$\sec x$

$R = (2n+1)\pi/2$

$R = (-1, 1)$

 $\operatorname{cosec} x$

$R = n\pi$

$R = (-1, 1)$

$$n \in \mathbb{I}$$