Trigonometric Formular for Class 10

https://gmath.in/

1. Trigonometric Ratio

 $\begin{aligned} & Perpendicular = P \\ & Base = B \\ & Hypotenuse = H \end{aligned}$



$$\cot A = \frac{1}{\tan A}$$
$$\sec A = \frac{1}{\frac{1}{\cos A}}$$
$$\tan A = \frac{\frac{\sin A}{\cos A}}{\frac{\cos A}{\sin A}}$$
$$\cot A = \frac{\frac{\cos A}{\sin A}}{\frac{\sin A}{\sin A}}$$

2. Trigonometric table

θ	0	30°	45°	60°	90°
$\sin heta$	0	$\frac{1}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{\sqrt{3}}{2}$	1
$\cos heta$	1	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{2}$	0
an heta	0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	∞
$\cot heta$	∞	$\sqrt{3}$	1	$\frac{1}{\sqrt{3}}$	0
$\sec heta$	1	$\frac{2}{\sqrt{3}}$	$\sqrt{2}$	2	∞
cosec	∞	2	$\sqrt{2}$	$\frac{2}{\sqrt{3}}$	1

3. Trigonometric Identities

- (i) $\sin^2 A + \cos^2 A = 1$
- (a) $\sin^2 A = 1 \cos^2 A$
- (b) $\cos^2 A = 1 \sin^2 A$

(ii)
$$\sec^2 A - \tan^2 A = 1$$

(a)
$$\sec^2 A = 1 + \tan^2 A$$

- (b) $\tan^2 A = \sec^2 A 1$
- (iii) $\operatorname{cosec}^2 A = 1 + \cot^2 A = 1$
- (a) $\operatorname{cosec}^2 A = 1 + \cot^2 A$
- (b) $\cot^2 A = \csc^2 A 1$

https://gmath.in

Some other formulae

$$\sin(rac{\pi}{2} - A) = \cos A$$

 $\cos(rac{\pi}{2} - A) = \sin A$
 $\tan(rac{\pi}{2} - A) = \cot A$
 $\cot(rac{\pi}{2} - A) = \tan A$

 $\sec(\frac{\pi}{2} - A) = \operatorname{cosec} A$

 $\operatorname{cosec}(\frac{\pi}{2} - A) = \sin A$

https://gmath.in

Some special points

(1) $\sin A$ increase 0 to 1 from 0 to 90 degree

- (2) $\cos A$ decrease 1 to 0 from 0 to 90 degree
- (3) The value of $\tan A$ always greate than 1 between 0 to 90 degree
- (4) Reciprocal of 0 is infinity $(\frac{1}{0} = \infty)$
- (5) Reciprocal of infinity is 0 $\left(\frac{1}{\infty}=0\right)$
- (6) $\sin A$ is not a product of sin and A
- (7) $\sin(A + B) = (\sin A + \sin B)$ is false
- (8) $\sin \theta = \cos \theta$ if $\theta = 45^{\circ}$

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

(10) The value of sin A or cos A never exceeds 1, whereas the value of sec A or cosec A is always greater than or equal to 1.

For more Please visit

https://gmath.in