

CHAPTER 08

Introduction to Trigonometry

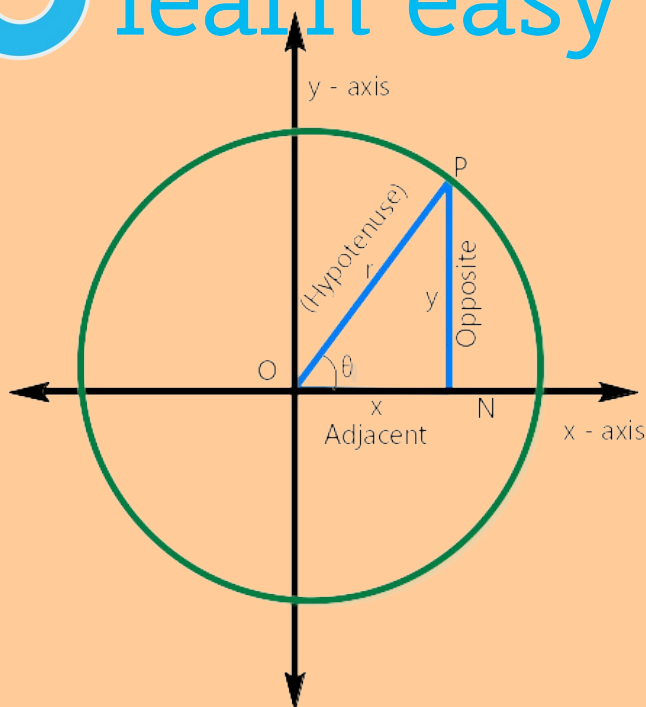
Trigonometric ratios of '0°':

Let us decrease the angle ' θ ', as the angle ' θ ' goes on decreasing the opposite side (y) also decreases. When ' θ ' becomes '0', the opposite side 'y' vanishes and the hypotenuse OP coincides with the adjacent ON as shown below.

So, when $\theta = 0^\circ$,

Perpendicular side = (y) = 0 and

Base side (x) = Hypotenuse (r) = x.



$$\sin 0^\circ = \frac{\text{Opposite}}{\text{Hypotenuse}} = \frac{y}{r} = \frac{0}{r} = 0$$

$$\Rightarrow \operatorname{Cosec} 0^\circ = \frac{\text{Hypotenuse}}{\text{Opposite}} = \frac{r}{y} = \frac{r}{0} = \text{Not defined } (\infty)$$

$$\cos 0^\circ = \frac{\text{Adjacent}}{\text{Hypotenuse}} = \frac{x}{r} = \frac{x}{x} = 1$$

$$\Rightarrow \sec 0^\circ = \frac{\text{Hypotenuse}}{\text{Adjacent}} = \frac{r}{x} = \frac{x}{x} = 1$$

$$\tan 0^\circ = \frac{\text{Opposite}}{\text{Adjacent}} = \frac{y}{x} = \frac{0}{x} = 0$$

$$\Rightarrow \cot 0^\circ = \frac{\text{Adjacent}}{\text{Opposite}} = \frac{x}{y} = \frac{x}{0} = \text{Not defined } (\infty)$$

