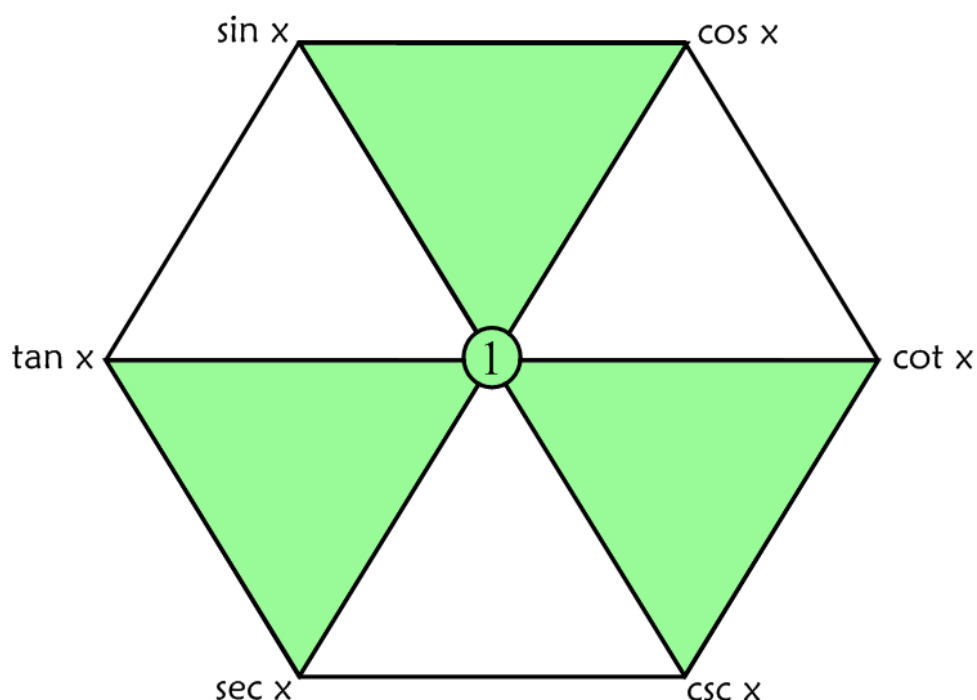


# HEXAGON OF TRIGONOMETRIC IDENTITIES



## 1. Reciprocal Identities

- Located along the diagonals

- $\sec x = \frac{1}{\cos x}$        $\csc x = \frac{1}{\sin x}$        $\cot x = \frac{1}{\tan x}$

## 2. Quotient Identities

- Any vertex divided by its neighbor = its other neighbor

- eg.  $\frac{\sin x}{\cos x} = \tan x$        $\frac{\cos x}{\sin x} = \cot x$        $\frac{\sec x}{\csc x} = \tan x$       etc...

## 3. Pythagorean Identities

- Use shaded triangles:  
The sum of the squares of the top vertices = bottom vertex squared

- $\sin^2 x + \cos^2 x = 1$        $\tan^2 x + 1 = \sec^2 x$        $1 + \cot^2 x = \csc^2 x$