Trigonometric Identity Hexagon

(a convenient way to remember 26 trigonometric identities)

The product of any three non – adjacent functions is 1.

$$\sin x \times \sec x \times \cot x = 1$$

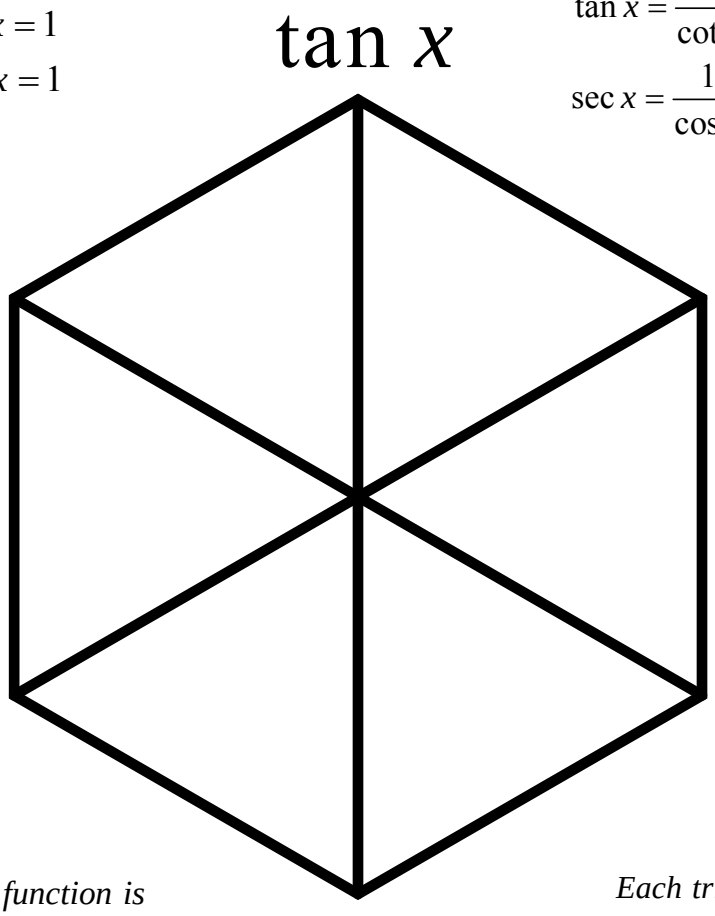
$$\tan x \times \csc x \times \cos x = 1$$

The two trigonometric functions at the ends of any diagonal are reciprocals of one another.

$$\sin x = \frac{1}{\csc x} \text{ and } \csc x = \frac{1}{\sin x}$$

$$\tan x = \frac{1}{\cot x} \text{ and } \cot x = \frac{1}{\tan x}$$

$$\sec x = \frac{1}{\cos x} \text{ and } \cos x = \frac{1}{\sec x}$$



Order is important!

Is this figure a hexagon, a cube, or both?

Each trigonometric function is the product of the trigonometric functions on both sides of it.

$$\sin x = \cos x \times \tan x$$

$$\tan x = \sin x \times \sec x$$

$$\sec x = \tan x \times \csc x$$

$$\csc x = \sec x \times \cot x$$

$$\cot x = \csc x \times \cos x$$

$$\cos x = \cot x \times \sin x$$

Each trigonometric function is equal to either of its adjacent trigonometric functions divided by the next adjacent trigonometric function.

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

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

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

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

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

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