

EVEN / ODD PROPERTIES

- COS AND SEC ARE EVEN

$$\cos(-A) = \cos(A)$$

$$\sec(-A) = \sec(A)$$

- SIN, CSC, TAN, COT ARE ODD

$$\sin(-A) = -\sin(A)$$

$$\csc(-A) = -\csc(A)$$

$$\tan(-A) = -\tan(A)$$

$$\cot(-A) = -\cot(A)$$

$$y = x^2 \quad \text{EVEN FUNCTION}$$

$$y = (-2)^2$$

$$y = 4$$

$$y = (2)^2$$

$$y = 4$$

10. $\cos(-60^\circ)$

$$\cos(60^\circ)$$

$$= \left(\frac{1}{2}\right)$$

11. $\tan(-120^\circ)$

$$-\tan(120^\circ)$$

$$\frac{y}{x}$$

$$-\left(\frac{\frac{\sqrt{3}}{2}}{-\frac{1}{2}}\right)$$

$$\frac{\sqrt{3}}{1}$$

$$\left(\frac{\sqrt{3}}{1}\right)$$

12. $\csc\left(-\frac{2\pi}{3}\right)$

$$-\csc\left(\frac{2\pi}{3}\right)$$

$$\frac{1}{y}$$

$$-\left(\frac{1}{\frac{\sqrt{3}}{2}}\right)$$

$$-1 \cdot \frac{2}{\sqrt{3}}$$

$$\frac{-2}{\sqrt{3}}$$

$$\left(\frac{-2\sqrt{3}}{3}\right)$$

PROPERTIES

1. $\tan A = \frac{\sin A}{\cos A}$

6. $\cos A = \frac{1}{\sec A}$

2. $\cot A = \frac{\cos A}{\sin A}$

7. $\sin A = \frac{1}{\csc A}$

3. $\cos^2 A + \sin^2 A = 1$

8. $\tan A = \frac{1}{\cot A}$

4. $1 + \tan^2 A = \sec^2 A$

9. $\sec A = \frac{1}{\cos A}$

5. $\cot^2 A + 1 = \csc^2 A$

10. $\csc A = \frac{1}{\sin A}$

11. $\cot A = \frac{1}{\tan A}$

$$\tan A = \frac{y}{x} \quad \text{AND} \quad \begin{matrix} \cos \theta = x \\ \sin \theta = y \end{matrix}$$

$$\tan A = \frac{\sin A}{\cos A}$$

$$\cot A = \frac{x}{y} = \frac{\cos A}{\sin A}$$

$$x^2 + y^2 = 1$$

$$(\cos A)^2 + (\sin A)^2 = 1$$

$$\rightarrow \cos^2 A + \sin^2 A = 1$$

$$\frac{\cos^2 A}{\cos^2 A} + \frac{\sin^2 A}{\cos^2 A} = \frac{1}{\cos^2 A}$$

$$1 + \tan^2 A = \sec^2 A$$

$$\frac{\cos^2 A}{\sin^2 A} + \frac{\sin^2 A}{\sin^2 A} = \frac{1}{\sin^2 A}$$

$$\cot^2 A + 1 = \csc^2 A$$