

## Non-Permissible Values

**Remember:** A non-permissible value is anything that makes the **denominator of a fraction equal to zero**.

To find the non-permissible values of a trig identity, make all denominators equal to zero and solve.

Be sure to consider the domain that is given and match your answers to the given domain. If all of the non-permissible values are required, the solution will be the general solution.

On the interval  $0 \leq \theta < 2\pi$ , identify the non-permissible values of  $\theta$  for the trigonometric identity:

$$\tan \theta = \frac{1}{\cot \theta}$$

You must change all trig functions into their equivalent trig functions before solving in order to find the denominators.

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

$$\cos \theta \neq 0$$

$$\theta \neq \frac{\pi}{2}, \frac{3\pi}{2}$$

$$\cot \theta \neq 0$$

$$\frac{\cos \theta}{\sin \theta} \neq 0$$

$$\theta \neq 0, \pi$$

Determine the non-permissible values of  $\theta$ :  $\frac{\sin \theta + \tan \theta}{1 + \cos \theta} = \sin \theta \sec \theta$

$$1 + \cos \theta \neq 0$$

$$\cos \theta \neq -1$$

$$\theta \neq \pi + 2\pi k$$

$$k \in \mathbb{Z}$$

$$\cos \theta \neq 0$$

$$\theta \neq \frac{\pi}{2} + 2\pi k$$

$$\theta \neq \frac{3\pi}{2} + 2\pi k$$

$$\frac{1}{\cos \theta}$$