

DATE: \_\_\_\_\_

## 5.2 Proving Identities

*Target 6B: Prove Trigonometric Identities*

With your group members, prove the following identities. Your group will prove one to the class.

**Prove the identity.**

1.  $\frac{1}{\tan \theta} + \tan \theta = \sec \theta \csc \theta$

2.  $2 \csc^2 \alpha = \frac{1}{1-\cos \alpha} + \frac{1}{1+\cos \alpha}$

3.  $\frac{\sec x + 1}{\tan x} = \frac{\sin x}{1-\cos x}$

4.  $\frac{\cot y - 1}{\cot y + 1} = \frac{1-\tan y}{1+\tan y}$

5.  $(\cos x - \sin x)^2 = 1 - 2 \sin x \cos x$

6.  $\tan^2 \alpha - \sin^2 \alpha = \tan^2 \alpha \sin^2 \alpha$

7.  $\frac{1-\cos \beta}{\sin \beta} = \frac{\sin \beta}{1+\cos \beta}$

8.  $2 \csc \theta = \frac{1+\cos \theta}{\sin \theta} + \frac{\sin \theta}{1+\cos \theta}$