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