Secondary 2H **Name**_____ **Desk** _____

Unit 9 **Simplifying Trig Identities**

Score _____

Simplify each expression to a single trig function or number.

1. $\sec\theta \sin\theta$

2. $\cos\theta \tan\theta$

3. $\tan^2\theta - \sec^2\theta$

4. $1 - \cos^2\theta$

5. $(1 - \cos\theta)(1 + \cos\theta)$

6. $(\sec x - 1)(\sec x + 1)$

7. $\frac{1}{sin^2 A} - \frac{1}{\tan^2 A}$

8. $1 - \frac{\sin^2\theta}{\tan^2\theta}$

9. $\frac{1}{\cos^2\theta} - \frac{1}{\cot^2\theta}$

10. $\cos\theta\,(\sec\theta - \cos\theta)$

11. $\cos^2 A(\sec^2 A - 1)$

12. $(1 - \cos x)(1 + \sec x)(\cos x)$

13. $\frac{\sin x \cos x}{1-\cos^2 x}$

14. $\frac{\tan^2 \theta}{\sec \theta + 1} + 1$

15. Find the following for an angle in standard position with measure $-856°$

a. The quadrant in which the angle is located. _____

b. The coterminal angle that is between 0 and 2π. _____

c. The reference angle. _____.

16. Find the following for an angle in standard position with measure $675°$.

a. The quadrant in which the angle is located. _____

b. The coterminal angle that is between 0 and $360°$. _____

c. The reference angle. _____.

17. Find the following for an angle in standard position with measure $690°$

a. The quadrant in which the angle is located. _____

b. The coterminal angle that is between 0 and 2π. _____

c. The reference angle. _____.

d. $\sin 690° =$_____ $\cos 690° =$_____ $\tan 690° =$_____

$\csc 690° =$_____ $\sec 690° =$_____ $\cot 690° =$_____

18. If $\cot \theta = 7$ and $180° < \theta < 360°$, sketch the angle θ and find the value of the other five trig functions.

$\sin \theta =$ _____ $\csc \theta =$ _____

$\cos \theta =$ _____ $\sec \theta =$ _____

$\tan \theta =$ _____