

UNIT 6 WORKSHEET 11
USING IDENTITIES TO SIMPLIFY EXPRESSIONS

List the quotient identities.

1. $\tan \theta =$ _____

2. $\cot \theta =$ _____

List the Pythagorean Identities.

3. _____

4. _____

5. _____

Factor the expressions and use the fundamental identities to simplify each of the following.

6. $\tan^2 \theta - \tan^2 \theta \sin^2 \theta$

7. $\sin^2 \alpha \csc^2 \alpha - \sin^2 \alpha$

8. $\sin^2 \theta \sec^2 \theta - \sin^2 \theta$

9. $\cos^2 \beta + \cos^2 \beta \tan^2 \beta$

10. $\frac{\sec^2 x - 1}{\sec x - 1}$

11. $\frac{\cos^2 \theta - 4}{\cos \theta - 2}$

12. $\tan^4 \phi + 2 \tan^2 \phi + 1$

13. $1 - 2 \cos^2 \theta + \cos^4 \theta$

14. $\sin^4 x - \cos^4 x$

15. $\csc^3 \theta - \csc^2 \theta - \csc \theta + 1$

16. $\sec^3 x - \sec^2 x - \sec x + 1$

17. $\cos^2 x + \cos^2 x \cot^2 x$