

Unit 6: Trig Identities

Lesson #1: Establish Trig Identities MA3A5

Simplify using the fundamental identities.

1. $\frac{\sin \alpha \cos \alpha}{1 - \sin^2 \alpha}$
2. $\frac{1 - \cos^2 \theta}{\sin \theta \cos \theta}$
3. $\sec \alpha - \sin \alpha \tan \alpha$
4. $\cos^2 \theta (\cot^2 \theta + 1)$
5. $\frac{1 - \sin^2 \theta}{1 - \sin \theta} - 1$
6. $\frac{\sec^2 \alpha - 1}{\sec \alpha + 1} + 1$
7. $\frac{\tan \alpha + \cot \alpha}{\sec^2 \alpha}$
8. $\frac{\sec \theta - \cos \theta}{\tan^2 \theta}$
9. $\cot \theta (\cos \theta \tan \theta + \sin \theta)$
10. $\sin \beta + \cos \beta \cot \beta$
11. $\frac{\tan^2 \alpha}{\sec \alpha + 1} + 1$
12. $\frac{\sec \beta + \csc \beta}{1 + \tan \beta}$
13. $\frac{\tan \theta}{1 + \sec \theta} + \frac{1 + \sec \theta}{\tan \theta}$
14. $\frac{\sin \theta}{1 + \cos \theta} + \frac{1 + \cos \theta}{\sin \theta}$
15. $(\cos \theta + \sin \theta)^2 + (\cos \theta - \sin \theta)^2$
16. $(1 + \tan \beta)^2 + (1 - \tan \beta)^2$