

Name: _____ Date: _____ Per: _____

PC5-1: Simplifying Trig Expressions

USING BASIC IDENTITIES: Simplify each expression using basic identities

1) $\cot \theta \cdot \tan \theta$

2) $\cot \theta \cdot \sin \theta$

3) $\cos \theta (1 + \tan^2 \theta)$

4) $\sec \theta (1 - \sin^2 \theta)$

5) $\sec \theta \cdot \frac{\sin \theta}{\tan \theta}$

6) $\frac{\sin^2 \theta}{1 - \cos \theta}$

7) $\frac{1 - \cos^2 \theta}{\sin \theta}$

8) $\frac{1 + \tan \theta}{1 + \cot \theta}$

9) $\frac{\sec^2 \theta \csc \theta}{\sec^2 \theta + \csc^2 \theta}$

10) $\frac{\tan^2 \theta}{\sec \theta + 1}$

USING FRACTIONS: Combine the fractions and simplify

11) $\frac{1}{1 - \sin \theta} + \frac{1}{1 + \sin \theta}$

12) $\frac{1}{\sec \theta - 1} - \frac{1}{\sec \theta + 1}$

13) $\frac{\sin \theta}{1 - \cos \theta} + \frac{1 - \cos \theta}{\sin \theta}$

14) $\frac{\tan \theta}{1 + \sec \theta} + \frac{1 + \sec \theta}{\tan \theta}$

15) $\frac{\cos \theta}{1 + \sin \theta} + \frac{1 + \sin \theta}{\cos \theta}$

16) $\tan \theta + \frac{\cos \theta}{1 + \sin \theta}$

ANSWERS: 1) 1 2) $\cos \theta$ 3) $\sec \theta$ 4) $\cos \theta$ 5) 1 6) $1 + \cos \theta$ 7) $\sin \theta$ 8) $\tan \theta$
9) $\sin \theta$ 10) $\sec \theta - 1$ 11) $2\sec^2 \theta$ 12) $2\cot^2 \theta$ 13) $2\csc \theta$ 14) $2\csc \theta$ 15) $2\sec \theta$ 16) $\sec \theta$