

## Practice - Section 5-1 - Simplifying Trig Expressions Date \_\_\_\_\_ Section \_\_\_\_\_

Simplify each expression as much as possible.

1)  $\sec \theta \cos \theta$

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

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

4)  $\sin^2 \theta + \cos^2 \theta$

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

6)  $\tan^2 \theta \csc^2 \theta$

7)  $\sin \theta \tan \theta \cot \theta \csc \theta$

8)  $\frac{\sin^2 \theta + \cos^2 \theta}{\cos^2 \theta}$

9)  $\sec \theta - \sin \theta \tan \theta$

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

11)  $\frac{\csc \theta}{\sin \theta} - \frac{\cot \theta}{\tan \theta}$

12)  $\sec^2 \theta - \tan^2 \theta + \cot^2 \theta$

13)  $\cos \theta \sec \theta - \frac{\cos \theta}{\sec \theta}$

14)  $\frac{\sec^2 \theta}{\sec^2 \theta - 1}$

15)  $\sin^4 \theta - \cos^4 \theta$

16)  $\tan \theta \cot \theta - \cos^2 \theta$

17)  $\frac{\sin \theta + \tan \theta}{1 + \sec \theta}$

18)  $\frac{\tan \theta + \cot \theta}{\csc^2 \theta}$

Hint: first do  $\tan \theta + \cot \theta$ 

19)  $(1 + \cos \theta)(\csc \theta - \cot \theta)$   
Hint: FOIL then put in terms of  $\sin \theta$  and  $\cos \theta$

20)  $(4\cos \theta - 3\sin \theta)^2 + (3\cos \theta + 4\sin \theta)^2$   
Hint: FOIL each binomial

## Answers to Practice - Section 5-1 - Simplifying Trig Expressions

1) 1

5)  $\sin \theta$

9)  $\cos \theta$

13)  $\sin^2 \theta$

17)  $\sin \theta$

2)  $\cos \theta$

6)  $\sec^2 \theta$

10)  $\sin^2 \theta$

14)  $\csc^2 \theta$

18)  $\tan \theta$

3)  $\sec^2 \theta$

7) 1

11) 1

15)  $\sin^2 \theta - \cos^2 \theta$

19)  $\sin \theta$

4) 1

8)  $\sec^2 \theta$

12)  $\csc^2 \theta$

16)  $\sin^2 \theta$

20) 25