

Name: _____

Date: _____

**Trigonometric Identities
Practice Worksheet 1**

Use the quotient and reciprocal identities to simplify the given expression.

1. $\cot t \sin t$

3. $\csc t \sin t$

2. $\tan t \cot t$

4. $\cot t \sec t$

Use the Pythagorean identities to simplify the given expression.

5. $\sin^2 t + \cot^2 t \sin^2 t$

7. $\frac{\csc^2 t - \cot^2 t}{\sin^2 t}$

6. $1 - \sec^2 t$

8. $\frac{\sin^2 t - \cos^2 t \sin^2 t}{\sin^2 t}$

For the following exercises, $\sin t = 3/5$. Use the cofunction identities and the even/odd identities to evaluate each trigonometric function.

9. $\sin(-t)$

11. $\sin\left(\frac{\pi}{2} - t\right)$

10. $\sin\left(\frac{\pi}{2} - t\right)$

12. $\tan(-t)$

Use the fundamental identities and algebra to simplify the expression.

13. $(\sin t + \cos t)(\sin t - \cos t)$

16. $\frac{\cos^2 t + 4 \cos t + 4}{\cos t + 2}$

14. $\frac{\sin t}{\tan t}$

17. $\frac{1}{\cos t} - \sin t \tan t$

15. $\left(\frac{4 \cos^2 t}{\sin^2 t}\right) \left(\frac{\sin t}{4 \cos t}\right)^2$