Name: _____ **Date:** _____

Trigonometric Identities
Practice Worksheet 1

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

1. $\cot t \sin t$
2. $\tan t \cot t$
3. $\csc t \sin t$
4. $\cot t \sec t$

Use the Pythagorean identities to simplify the given expression.

5. $\sin^2 t + \cot^2 t \sin^2 t$
6. $1 - \sec^2 t$
7. $\dfrac{\csc^2 t - \cot^2 t}{\sin^2 t}$
8. $\dfrac{\sin^2 t - \cos^2 t \sin^2 t}{\sin^2 t}$

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

9. $\sin(-t)$
10. $\sin\left(\dfrac{\pi}{2} - t\right)$
11. $\sin\left(\dfrac{\pi}{2} - t\right)$
12. $\tan(-t)$

Use the fundamental identities and algebra to simplify the expression.

13. $(\sin t + \cos t)(\sin t - \cos t)$
14. $\dfrac{\sin t}{\tan t}$
15. $\left(\dfrac{4\cos^2 t}{\sin^2 t}\right)\left(\dfrac{\sin t}{4\cos t}\right)^2$
16. $\dfrac{\cos^2 t + 4\cos t + 4}{\cos t + 2}$
17. $\dfrac{1}{\cos t} - \sin t \tan t$