

9-1 Verifying Trigonometric Identities Practice

Verify each identity. Show all work. Do your work on a separate piece of paper. Make sure to justify each step.

1. $\tan x \csc x \cos x = 1$

2. $\tan x \sec x \sin x = \tan^2 x$

3. $(\sin x - \cos x)(\sin x + \cos x) = 1 - 2 \cos^2 x$

4. $(\tan x)(1 - \cot x) = \tan x - 1$

5. $\frac{1}{\sin x} - \frac{1}{\cos x} = \frac{\cos x - \sin x}{\sin x \cos x}$

6. $\frac{\cos x}{1 - \sin x} = \sec x + \tan x$

7. $\sin^4 x - \cos^4 x = \sin^2 x - \cos^2 x$

8. $\frac{\cos x \tan x - \sin x}{\cot x} = 0$

9. $(\sin x + \cos x)^2 = 1 + 2 \sin x \cos x$

10. $\frac{2 \sin x \cot x + \sin x - 4 \cot x - 2}{2 \cot x + 1} = \sin x - 2$

11. $\sec x - \cos x = \sin x \tan x$

12. $\frac{\frac{1}{\sin x} + \frac{1}{\cos x}}{\frac{1}{\sin x} - \frac{1}{\cos x}} = \frac{\cos^2 x - \sin^2 x}{1 - 2 \cos x \sin x}$

13. $\frac{2 \cot x}{\cot x + \tan x} = 2 \cos^2 x$

