

Directions: Simplify the following expressions and match them with their solution. Connect the number of the question with the letter of the solution to create a picture. **Show all work on a separate sheet of paper!**

1. $\sec^2 x - 1$

2. $\frac{1}{\sin x}$

3. $\sin x \cot x$

4. $\frac{\sin^2 x}{1 + \cos x}$

5. $1 + \tan^2 x$

6. $\csc^2 x - \cot^2 x$

7. $\frac{\cos^2 x}{1 + \sin x}$

8. $\frac{\sin x + \cos x}{\sin x \cos x}$

9. $\frac{\cot^2 x}{\csc x - 1}$

10. $\frac{1}{\tan x}$

11. $\frac{1}{\cot x}$

12. $\frac{\cos x}{\cot x}$

13. $\cot^2 x + 1$

14. $\frac{1}{\cos x}$

15. $\frac{\cot^2 x}{\csc x + 1}$

16. $\sin^2 x + \cos^2 x + 1$

17. $1 - (\sec^2 x - \tan^2 x)$

18. $\csc^2 x - 1$

19. $1 - \sin^2 x$

20. $\frac{\tan^2 x}{\sec x - 1}$

21. $\frac{\tan^2 x}{\sec x + 1}$

22. $-(\sin^2 x + \cos^2 x)$

23. $\frac{\sin x - \cos x}{\sin x \cos x}$

24. $1 - \sec^2 x$

25. $1 - \csc^2 x$

26. $3(\sin^2 x + \cos^2 x)$

27. $\cos x \tan x + \sin x \cot x$

A. $\csc x$

B. 1

C. $\sec x + \csc x$

D. $\sin x$

E. $\sec x$

F. 2

G. -1

H. $\cos^2 x$

I. 3

J. $\csc x - 1$

K. $\sec x - 1$

L. $\cot^2 x$

M. $\sec x - \csc x$

N. $\sec x + 1$

O. 0

P. $\tan^2 x$

Q. $\cos x$

R. $-\cot^2 x$

S. $\sec^2 x$

T. $1 - \sin x$

U. $\csc x + 1$

V. $\tan x$

W. $1 - \cos x$

X. $-\tan^2 x$

Y. $\cot x$

Z. $\csc^2 x$

AA. $\sin x + \cos x$

