Unit 3 WS 4

Show all work. Use the two-column format.

Prove . . .

1) $\sin^2 x - \tan^2 x = -\sin^2 x \tan^2 x$

2) $(\cos^2 x - 1)(\tan^2 x + 1) = -\tan^2 x$

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

4) $\tan x = \frac{\sec x}{\csc x}$

5) $\cos^4 x - \sin^4 x = \cos^2 x - \sin^2 x$

6) $\cot^2 x - \cos^2 x = \cos^2 x \cot^2 x$

7) $\frac{\sec x}{\csc x} + \frac{\sin x}{\cos x} = 2 \tan x$

8) $\frac{1+\cos x}{\sin x} + \frac{\sin x}{1+\cos x} = 2 \csc x$

9) $\frac{\sec x + \csc x}{1+\tan x} = \csc x$

10) $\frac{\cot x - 1}{1 - \tan x} = \frac{\csc x}{\sec x}$

11) $\frac{1}{\csc x - \sin x} = \sec x \tan x$