WS4--Fundamental Verifications **Name_____**

Verify each identity. Show ALL steps.

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

2. $\dfrac{\cos x}{1-\sin x}+\dfrac{1-\sin x}{\cos x}=2\sec x$

3. $\sec^2 x\csc^2 x=\sec^2 x+\csc^2 x$

4. $\dfrac{\sec x-\csc x}{\sec x+\csc x}=\dfrac{\tan x-1}{\tan x+1}$

5. $\dfrac{\sin^2 x-\cos^2 x}{\sin x+\cos x}=\sin x-\cos x$

6. $\tan^2 x+\sin^2 x+\cos^2 x=\sec^2 x$

7. $\dfrac{\tan x+\cot x}{\csc x}=\sec x$

8. $\dfrac{\tan x+\tan y}{1-\tan x\tan y}=\dfrac{\sin x\cos y+\cos x\sin y}{\cos x\cos y-\sin x\sin y}$

9. $(\sec x-\tan x)^2=\dfrac{1-\sin x}{1+\sin x}$

10. $\dfrac{\sec x+1}{\tan x}=\dfrac{\tan x}{\sec x-1}$

11. $\dfrac{1+\cos x}{1-\cos x}=(\csc x+\cot x)^2$

12. $\cos^4 x-\sin^4 x=1-2\sin^2 x$

13. $\dfrac{1}{1-\cos\theta}+\dfrac{1}{1+\cos\theta}=2\csc^2\theta$

14. $\sin^4\theta-\cos^4\theta=1-2\cos^2\theta$

15. $\dfrac{\sin\theta+\cot\theta}{\cos\theta}=\csc\theta+\tan\theta$