Is it a Trig Identity?   Name_____

Directions: All of the following equations are trigonometric identities (that is, they are TRUE!) except for **two** of them. Find the two FALSE identities and show that all of the others are TRUE!

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

2. $1 - \sin^2 \theta = \dfrac{1}{\csc^2 \theta}$

3. $\cos^2 x + \cos^2 x \tan^2 x = 1$

4. $\sec\theta\cos\theta - \cos^2\theta = \sin^2\theta$

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

6. $\cot\theta\sec\theta = \dfrac{1}{\sin\theta}$

7. $\dfrac{\tan x + \cot x}{\csc x} = \dfrac{1}{\cos x}$

8. $\cos\theta\tan\theta = \sin\theta$

9. $\dfrac{1+\tan x}{1+\cot x}=\tan x$

10. $\dfrac{\sec^2\theta-\tan^2\theta}{2\sin^2\theta+2\cos^2\theta}=\dfrac{1}{2}$

11. $\dfrac{1+\sec x}{\csc x}=\sin x\tan x$

12. $\tan^2\theta\left(1+\cot^2\theta\right)=\sec^2\theta$

13. $\cot x+\tan x=\sec x\csc x$

14. $\tan^2\theta\sin^2\theta=\tan^2\theta-\sin^2\theta$

15. $\sin^2 x+\cos^2 x=\sin x\csc x$

16. $\dfrac{1+\tan^2\theta}{\csc^2\theta}=\tan^2\theta$