NAME_____

TRIGONOMETERY 2 ASSIGNMENT # 4

Prove the following identities.

1. $\cos x = \sin x \cot x$

2. $\dfrac{\tan\theta\cos\theta}{\sin\theta} = 1$

3. $\sec\theta - \cos\theta = \sin\theta\tan\theta$

4. $\sec A - \cos A = \sin A \tan A$

5. $(\sin r + \cos r)^2 = 1 + 2\sin r\cos r$

6. $\dfrac{\cos\theta - \sin\theta}{\cos\theta} = 1 - \tan\theta$

7. $\sec^2\theta - \sin^2\theta = \cos^2\theta + \tan^2\theta$

8. $\dfrac{\cot x - 1}{\tan x - 1} = -\cot x$

9. $\dfrac{1-\cos A}{\sin A} = \dfrac{\sin A}{1+\cos A}$

10. $\left(1-\cos^2\alpha\right)\left(\csc\alpha\right) = \sin\alpha$

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

12. $\sin\theta\cot\theta = \cos\theta$

13. $\csc\theta\left(1+\sin\theta\right) = 1+\csc\theta$

14. $\cos\theta\left(\sec\theta - 1\right) = 1-\cos\theta$

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

16. $\dfrac{1+\sin\theta}{1-\sin\theta} = \dfrac{\csc\theta + 1}{\csc\theta - 1}$

17. $\dfrac{\sin\theta + \tan\theta}{\cos\theta + 1} = \tan\theta$

18. $\sin^2\theta\cot^2\theta = 1 - \sin^2\theta$

19. $\sin^2\theta = \dfrac{\tan^2\theta}{1+\tan^2\theta}$