

## Assignment #9-2 A

## Secondary 3 Honors

Verify the following identities. Remember your work is your answer.

1.  $\csc^4 \theta = \cot^4 \theta + 2\cot^2 \theta + 1$

2.  $\frac{\sin^2 \theta}{\cos^2 \theta} = \sec^2 \theta - 1$

3.  $\cot \beta \sin \beta = \cos \beta$

4.  $\sin^2 \alpha + \tan^2 \alpha + \cos^2 \alpha = \sec^2 \alpha$

5.  $\sec y \cos y = 1$

6.  $\frac{\sin^2 \gamma}{\cos \gamma} = \sec \gamma - \cos \gamma$

7.  $(1 + \tan^2 x)\cos^2 x = 1$

8.  $\cot s + \tan s = \sec s \csc s$

9.  $\frac{\cos \alpha}{\sin \alpha \cot \alpha} = 1$

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

11.  $(1 - \cos^2 \alpha)(1 + \cos^2 \alpha) = 2\sin^2 \alpha - \sin^4 \alpha$

12.  $\sin^2 \alpha \sec^2 \alpha + \sin^2 \alpha \csc^2 \alpha = \sec^2 \alpha$

13.  $\sec^4 x - \sec^2 x = \tan^4 x + \tan^2 x$

14.  $\frac{\sec^4 s - \tan^4 s}{\sec^2 s + \tan^2 s} = \sec^2 s - \tan^2 s$

15.  $\sec x(\sec x - \cos x) = \tan^2 x$

16.  $\sin x(\csc x - \sin x) = \cos^2 x$