

Honors Algebra II
Proofs - Day 2

Name KEY
Date _____ Period _____

Prove.

1. $\frac{\tan \theta}{\sec \theta} = \sin \theta$

• $\frac{\frac{\sin \theta}{\cos \theta}}{\frac{1}{\cos \theta}} = \sin \theta$

• $\frac{\sin \theta}{\cancel{\cos \theta}} \cdot \frac{\cancel{\cos \theta}}{1} = \sin \theta$

• $\sin \theta = \sin \theta$

2. $\frac{\tan^2 \theta + 1}{\sec \theta} = \sec \theta$

• $\frac{\sec^2 \theta}{\sec \theta} = \sec \theta$

• $\sec \theta = \sec \theta$

Prove.

3. $\sin^2 \theta (1 + \cot^2 \theta) = 1$

• $\sin^2 \theta (\csc^2 \theta) = 1$

• $\frac{\sin^2 \theta}{1} \cdot \frac{1}{\sin^2 \theta} = 1$

• $1 = 1$

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

• $1 + \tan^2 \theta = \sec^2 \theta$

• $\sec^2 \theta = \sec^2 \theta$