

Prove the following trig identity.

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

$$\sec \theta - \tan \theta \sin \theta = \frac{1}{\cos \theta} - \frac{\sin \theta}{\cos \theta} \cdot \frac{\sin \theta}{1}$$

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

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