

$$\text{Verify } (\sec \theta - \tan \theta)(1 + \sin \theta) = \cos \theta$$

$$\left(\frac{1}{\cos \theta} - \frac{\sin \theta}{\cos \theta} \right) (1 + \sin \theta) \stackrel{?}{=} \cos \theta$$

$$\left(\frac{1 - \sin \theta}{\cos \theta} \right) (1 + \sin \theta) \stackrel{?}{=} \cos \theta$$

$$\frac{(1 - \sin \theta)(1 + \sin \theta)}{\cos \theta} \stackrel{?}{=} \cos \theta$$

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

$$\frac{\cos^2 \theta}{\cancel{\cos \theta}} \stackrel{?}{=} \cos \theta$$

$$\cos \theta = \cos \theta \quad \checkmark$$