

Simplify the following expressions.

$$\frac{\cot^2 \theta}{1 + \csc \theta} + \sin \theta \csc \theta$$

$$\sec \theta (\cos \theta - \cos^3 \theta)$$

Simplify the following expressions.

$$\sin \theta + \cot \theta \cos \theta$$

$$(\csc^2 \theta - 1)(\sec^2 \theta - 1)$$

Simplify the following expressions.

$$1 - \frac{\cos^2 \theta}{\cot^2 \theta} \qquad \frac{1 - \cos \theta}{1 - \cos \theta} \frac{\sin \theta}{1 + \cos \theta} + \frac{1 + \cos \theta}{\sin \theta}$$