

4 Simplify $\sin x + \sin x \cot^2 x$.

$$\sin x (1 + \cot^2 x)$$

$$\sin x \csc^2 x$$

$$\frac{1}{\csc x} \csc^2 x$$

$$\csc x$$

$$1 + \cot^2 x = \csc^2 x$$

$$\sin x = \frac{1}{\csc x}$$

$$\frac{\sin x}{1} \frac{1}{\sin x}$$

$$\frac{\sin x}{\csc x}$$

14. $\frac{\csc \theta}{\cot \theta}$

$$\cot \theta = \frac{\cos \theta}{\sin \theta}$$

$$\csc = \frac{1}{\sin \theta}$$

$$\frac{1}{\cos \theta} = \sec \theta$$

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

$$\frac{1}{\sin \theta} \cdot \frac{\sin \theta}{\cos \theta}$$

$$\frac{1}{\cos \theta}$$

$$\sec \theta$$

$$\frac{\csc \theta}{\cot \theta} = \csc \theta \cdot \frac{1}{\cot \theta}$$

$$\csc \theta \tan \theta$$

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

$$\frac{1}{\cos \theta}$$

$$\sec \theta$$

$$\frac{1}{\cot \theta} = \tan \theta$$

$$15. \cos x \csc x \tan x = 1$$

$$\frac{\cos x}{1} \cdot \frac{1}{\sin x} \cdot \frac{\sin x}{\cos x}$$

$$1$$

$$16. \cos x \cot x + \sin x$$

$$\cos x \frac{\cos x}{\sin x} + \sin x$$

$$\cot x = \frac{\cos x}{\sin x}$$

$$\frac{\cos^2 x}{\sin x} + \frac{\sin x}{1} \cdot \frac{\sin x}{\sin x}$$

$$\frac{\cos^2 x}{\sin x} + \frac{\sin^2 x}{\sin x}$$

$$\frac{\cos^2 x + \sin^2 x}{\sin x}$$

$$\cos^2 x + \sin^2 x = 1$$

$$\frac{1}{\sin x}$$

$$\frac{1}{\sin x} = \csc x$$

$$\csc x$$

p. 428-430			
25-29, 35-36, 44-45, 48,			
49, 51, 56, 69			