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

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

$\sin x \csc^2 x$

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

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

$\csc x$

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

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

$\frac{y^2}{y} = y$

$\sin x \csc^2 x$

$\sin x \quad \frac{1}{\sin^2 x}$

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

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

$\csc x$

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

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

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

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

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

$\sec \theta$

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

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

$\csc \theta \quad \frac{1}{\cot \theta}$

$\csc \theta \tan \theta$

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

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

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

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

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

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

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

1

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

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

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

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

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

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

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

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

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

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

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

$\csc x$

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