

$$\sec^2 x - \frac{\sin x}{\cos x} \frac{\cos x}{\sin x} = \tan^2 x$$

$$\sec^2 x - \tan x \frac{1}{\tan x} =$$

$$\sec^2 x - 1 =$$

$$\tan^2 x + 1 - 1 =$$

$$\tan^2 x = \tan^2 x$$

$$\frac{\sin A}{\csc A} + \frac{\cos A}{\sec A} = \csc^2 A - \cot^2 A$$

$$\frac{\sin A}{\frac{1}{\sin A}} + \frac{\cos A}{\frac{1}{\cos A}} = \frac{1 + \cot^2 A}{1} - \cot^2 A$$

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

$$1 = 1 \quad \checkmark$$

$$\frac{7 \sin \theta + 5 \cos \theta}{\sin \theta \cos \theta} = 7 \sec \theta + 5 \csc \theta$$

$$\frac{7 \cancel{\sin \theta}}{\cancel{\sin \theta} \cos \theta} + \frac{5 \cancel{\cos \theta}}{\sin \theta \cancel{\cos \theta}} =$$

$$\frac{7}{\cos \theta} + \frac{5}{\sin \theta} =$$

$$7\left(\frac{1}{\cos \theta}\right) + 5\left(\frac{1}{\sin \theta}\right) =$$

$$\rightarrow 7 \sec \theta + 5 \csc \theta = 7 \sec \theta + 5 \csc \theta$$

P. 434

13-27 odd