

5-1-2 Simplifying Trig Functions

Ex 4 Change to Sin, Cos

tan θ :

Simplify $\csc \theta \sec \theta - \cot \theta$

find common denominator $\left(\frac{1}{\sin \theta}\right)\left(\frac{1}{\cos \theta}\right) - \left(\frac{\cos \theta}{\sin \theta}\right)\left(\frac{\cos \theta}{\cos \theta}\right)$

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

$$\sin^2 \theta = 1 - \cos^2 \theta$$

$$\frac{\cancel{\sin^2 \theta}}{\cancel{\sin \theta} \cos \theta} = \frac{\sin \theta}{\cos \theta}$$

$= \tan \theta$

EX 5 Simplify by factoring

simplify $\sin^2 x \cos x - \underbrace{\sin\left(\frac{\pi}{2} - x\right)}_{\cos x}$

$$a^2 b - b$$

$$b(a^2 - 1)$$

$$\sin^2 x \cos x - \cos x$$
$$\cos x (\sin^2 x - 1)$$

$$\sin^2 \theta + \cos^2 \theta = 1$$
$$\begin{matrix} -1 & -1 \\ \hline -\cos^2 \theta & -\cos^2 \theta \end{matrix}$$

$$\sin^2 \theta - 1 = -\cos^2 \theta$$

$$\cos x (-\cos^2 x)$$

$= -\cos^3 x$

READ: 314 all

317: 22-23, 25-26, 29-30, 89