

7)
42)
49)
22,
50,
51,

$$7) \tan^2 - \sec^2$$

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

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

$$\frac{\sin^2 x}{\cos^2 x} - \frac{1}{\cos^2 x}$$

$$\frac{\sin^2 x - 1}{\cos^2 x}$$

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

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

$$\frac{-\cos^2 x}{\cos^2 x} = -1$$

$$42) \frac{(\sin x + \cos x)^4}{(\sin^2 x + 2 \sin x \cos x + \cos^2 x)^2} = \frac{(1 + 2 \sin x \cos x)^2}{(1 + 2 \sin x \cos x)^2}$$

$$22) \tan x \cdot \cos x \cdot \csc x$$

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

$$49) (1 - \cos^2 x)(1 + \cot^2 x) = 1$$

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

$$\sin^2 x \cdot \frac{1}{\sin^2 x} = 1$$

$$50) \cos^2 x - \sin^2 x = 2\cos^2 x - 1$$

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

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

$$51) 2\cos^2 x - 1 = 1 - 2\sin^2 x$$

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

$$1 - 2 + 2\cos^2 x$$

$$2\cos^2 x - 1$$

