Warm Up

Prove the following identity:

$$\boxed{\sin^2 2\theta} \over \cos\theta} \cdot \boxed{\csc^2\theta} = \boxed{\frac{4}{\sec\theta}}$$

$$\frac{(2\sin\theta\cos\theta)^2}{\cos\theta} \cdot \frac{1}{\sin^2\theta}$$

$$\frac{4\cancel{\sin^2\theta}\cos^{\cancel{2}}\theta}{\cancel{\sin^2\theta}\cancel{\cos\theta}}$$

$$4\boxed{\cos\theta}$$

$$4\left(\frac{1}{\sec\theta}\right)$$

$$\boxed{\frac{4}{\sec\theta}}$$

Questions from Homework

③ $\boxed{\sin(x+y)}\boxed{\sin(x-y)} = \cos^2 y - \cos^2 x$

$(\sin x\cos y + \cos x\sin y)(\sin x\cos y - \cos x\sin y)$ | $\boxed{\cos^2 y - \cos^2 x}$

$\sin^2 x\cos^2 y - \cos^2 x\sin^2 y$

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

$\cos^2 y - \cancel{\cos^2 x\cos^2 y} - \cos^2 x + \cancel{\cos^2 x\cos^2 y}$

$\boxed{\cos^2 y - \cos^2 x}$

④ $\boxed{\sin(x-y)} + \boxed{\cos(x+y)} = \boxed{(\cos x + \sin x)(\cos y - \sin y)}$

$\sin x\cos y - \cos x\sin y + \cos x\cos y - \sin x\sin y$

$(\sin x\cos y - \sin x\sin y) + (\cos x\cos y - \cos x\sin y)$

$\sin x(\cos y - \sin y) + \cos x(\cos y - \sin y)$

$\boxed{(\sin x + \cos x)(\cos y - \sin y)}$

⑤ $\boxed{\tan^2\theta} = \dfrac{1-\boxed{\cos 2\theta}}{1+\boxed{\cos 2\theta}}$

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

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

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

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

Finish Review for Homework