Warm Up

Prove the following identity:

$$\frac{\sin^2 2\theta}{\cos\theta} \bullet \csc^2\theta = \frac{4}{\sec\theta}$$

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

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

$$4\cos\theta$$

$$4 \div \frac{1}{\cos\theta}$$

$$4\cos\theta$$

Questions from Homework

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\boxed{\tan^2\theta}$$

Finish Review for Homework