Bellwork Alg 2B Tuesday, May 15, 2018

Simplify each trigonometric expression into a single trigonometric function or constant.

1. $\text{Csc}x(1 - \text{Cos}^2 x)$

2. $(\text{Sec}^2 y)(\text{Cot}^2 y)(\text{Sin}y)$

3. $\text{Cot}\theta(\text{Tan}\theta + \text{Cot}\theta)$

4. $\dfrac{\text{Sin}^2\theta}{\text{Cos}\theta} + \text{Cos}\theta$

5. $\dfrac{\text{Sn}\theta \cdot \text{Cos}\theta}{\text{Cot}\theta}$

6. $\dfrac{\text{Cot}\theta}{\text{Csc}\theta - \text{Sin}\theta}$

Bellwork Alg 2B Tuesday, May 15, 2018

ANSWERS

Simplify each trigonometric expression into a single trigonometric function or constant.

1. $\text{Csc}x(1 - \text{Cos}^2 x)$

$= \frac{1}{\sin}(\sin^2)$

$= \boxed{\sin x}$

2. $(\text{Sec}^2 y)(\text{Cot}^2 y)(\text{Sin}y)$

$= \left(\frac{1}{\cos^2}\right)\left(\frac{\cos^2}{\sin^2}\right)(\sin)$

$= \frac{1}{\sin} = \boxed{\csc y}$

3. $\text{Cot}\theta(\text{Tan}\theta + \text{Cot}\theta)$

$\cot \cdot \tan + \cot^2$

$= 1 + \cot^2$

$= \boxed{\csc^2 \theta}$

4. $\frac{\text{Sin}^2\theta}{\text{Cos}\theta} + \text{Cos}\theta \cdot \frac{\cos}{\cos}$

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

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

$= \frac{1}{\cos} = \boxed{\sec \theta}$

5. $\frac{\text{Sn}\theta \cdot \text{Cos}\theta}{\text{Cot}\theta}$

$= \frac{\sin \cdot \cos}{\frac{\cos}{\sin}}$

$= \sin \cdot \cos \cdot \frac{\sin}{\cos}$

$= \boxed{\sin^2 \theta}$

6. $\frac{\text{Cot}\theta}{\text{Csc}\theta - \text{Sin}\theta}$

$= \frac{\frac{\cos}{\sin}}{\frac{1}{\sin} - \sin \cdot \frac{\sin}{\sin}} = \frac{\frac{\cos}{\sin}}{\frac{1}{\sin} - \frac{\sin^2}{\sin}}$

$= \frac{\frac{\cos}{\sin}}{\frac{1-\sin^2}{\sin}} = \frac{\frac{\cos}{\sin}}{\frac{\cos^2}{\sin}} = \frac{\cos}{\sin} \cdot \frac{\sin}{\cos^2}$

$= \frac{1}{\cos} = \boxed{\sec \theta}$