Bellwork Alg 2B 5th hr Wednesday, May 17, 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. $\dfrac{\text{Sin}\theta \cdot \text{Cos}\theta}{\text{Cot}\theta}$

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

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ALG 2B 5th hour Bellwork Thurs 5-17-18 Answers

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

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

$= \sin x$

(2) $(\sec^2)(\cot^2)(\sin)$

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

$= \frac{1}{\sin} = \csc x$

(3) $\cot(\tan + \cot)$

$= \cot\cdot\tan + \cot\cdot\cot$

$= 1 + \cot^2$

$= \csc^2 x$

(4) $\frac{\sin^2}{\cos} + \cos\cdot\frac{\cos}{\cos}$

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

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

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

(5) $\frac{\sin\cdot\cos}{\frac{\cos}{\sin}}$

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

$= \sin^2\theta$

(6) $\frac{\cot}{\csc - \sin}$

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

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

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

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