

Algebra 2 Bellwork Tuesday, May 31, 2016

Simplify each trigonometric expression.

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

2. $\frac{\sin x}{\cos x \cdot \tan x}$

3. $\frac{\sin^2 x}{\cos x} + \cos x$

4. $\frac{\sec x - \cos x}{\sec x}$

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Simplify each trigonometric expression.

1. $\csc x(1 - \cos^2 x)$
 $\frac{1}{\sin x} \cdot (\sin^2 x) = \sin x$

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

3. $\frac{\sin^2 x}{\cos x} + \cos x \cdot \frac{\cos x}{\cos x}$
 $= \frac{\sin^2 x}{\cos x} + \frac{\cos^2 x}{\cos x}$
 $= \frac{\sin^2 x + \cos^2 x}{\cos x} = \frac{1}{\cos x} = \sec x$

4. $\frac{\sec x - \cos x}{\sec x}$
 $= \frac{\frac{1}{\cos x} - \cos x}{\frac{1}{\cos x}} \cdot \frac{\cos x}{\cos x}$
 $= \frac{1 - \cos^2 x}{1}$
 $= \sin^2 x$

Answers