

Warm Up

Verify.

factor

$$\frac{\csc^2 x + 6 \csc x + 5}{\cot^2 x} = \frac{\csc x + 5}{\csc x - 1}$$

$$\frac{(\csc x + 5)(\csc x + 1)}{\csc^2 x - 1} = \frac{\csc x + 5}{(\csc x - 1)(\csc x + 1)}$$

Homework Questions?

Chapter 7

Learning Target 5

I can verify trigonometric identities using conjugates.

What is a conjugate?

1.)

$$\frac{(1 + \sin x) \cos x}{(1 + \sin x)(1 - \sin x)} = \frac{1 + \sin x}{\cos x}$$

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

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

$$\frac{\cos x + \cos x \sin x}{\cos^2 x} = \frac{1 + \sin x}{\cos x}$$

$$\frac{\cancel{\cos x} (1 + \sin x)}{\cos^2 x} = \frac{1 + \sin x}{\cos x}$$

$$\frac{1 + \sin x}{\cos x} = \frac{1 + \sin x}{\cos x} \quad \checkmark$$

2.)

$$\tan x + \sec x = \frac{1 (\sec x + \tan x)}{(\sec x - \tan x)(\sec x + \tan x)}$$

$$\tan x + \sec x = \frac{\sec x + \tan x}{\sec^2 x - \cancel{\tan x \sec x + \tan x \sec} - \tan^2 x}$$

$$\tan x + \sec x = \frac{\sec x + \tan x}{\sec^2 x - \tan^2 x}$$

$$\tan x + \sec x = \frac{\sec x + \tan x}{1}$$

$$\tan x + \sec x = \sec x + \tan x$$

✓

3.)

$$\sec x + \tan x = \frac{\cos x (1 + \sin x)}{1 - \sin x (1 + \sin x)}$$

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

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

$$\frac{1 + \sin x}{\cos x}$$

$$\frac{1}{\cos x} + \frac{\sin x}{\cos x}$$

$$\sec x + \tan x$$

⑤

✓

Perimeter of polygons: add all sides

Circumference: $2\pi r$ or $d\pi$