Daily Agenda

Learning Target: I can use the properties of trig functions to prove a trig identity.

Homework
8.6 Day 3 Worksheet

Assessment
8.6 Quiz - 3/7

No winter lasts forever; no spring skips its turn.
-Hal Borland

Nov 15-8:24 PM

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

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

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

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

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

$\frac{2}{\cos x} =$

$2\sec x = 2\sec x$

Mar 1-10:56 AM

Strategies for Proving Trig Identities

Algebraic
- add fractions
- factor
- multiply by a form of 1 (common denominators, conjugates)
- distribute

Trigonometric
- substitute other trig functions
- if squares, think of Pythagorean
- replace functions to ones you see in answer

Mar 19-2:01 PM

8.6 Trig Identities

Prove the equation is an identity

$\frac{(1+\sin x)}{(1+\sin x)}\frac{1+\sin x}{(1-\sin x)} = 2\sec^2 x + 2\sec x\tan x - 1$

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

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

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

$\sec^2 x + 2\sec x\tan x + \tan^2 x =$

$\sec^2 x + 2\sec x\tan x + \sec^2 x - 1$

$2\sec^2 x + 2\sec x\tan x - 1 = 2\sec^2 x+2\sec x\tan x-1$

Mar 15-9:06 AM

8.6 Trig Identities

Prove the equation is an identity

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

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

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

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

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

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

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

$\frac{1+\sin x}{1-\sin x} = \frac{1+\sin x}{1-\sin x}$

Mar 15-9:06 AM

8.6 Trig Identities

Prove the equation is an identity

$\frac{\sec^2 x-6\tan x+7}{\sec^2 x-5} = \frac{\tan x-4}{\tan x+2}$

$\frac{\tan^2 x+1-6\tan x+7}{\tan^2 x+1-5} =$

$\frac{\tan^2 x-6\tan x+8}{\tan^2 x-4} =$

$\frac{(\tan x-4)(\tan x-2)}{(\tan x+2)(\tan x-2)} =$ $\frac{\tan x-4}{\tan x+2}$

Mar 15-9:06 AM