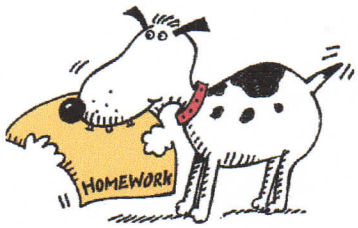
HOMEWORK TAKE-UP

p. 398 #2, 4, p. 400 #7

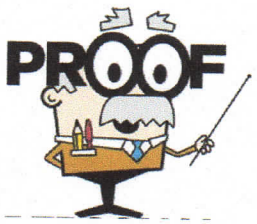


UNIT #6: Trigonometric Transformations

Trigonometric Identities Continued...

Learning Goal:

I will learn how to prove complex trig identities using the fundamental trig identities.



Lesson: Trigonometric Identities Continued...

Example 1: Proving an identity using factoring

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

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

Diff. of squares $\quad \frac{(1-\cos x)(1+\cos x)}{1-\cos x} = 1+\cos x$

$1+\cos x = 1+\cos x$

Example 2: Proving an identity using common denominator

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

common denom: $\quad \frac{(1+\sin x)-(1-\sin x)}{(1-\sin x)(1+\sin x)} = \frac{2\left(\frac{\sin x}{\cos x}\right)}{\cos x}$

Simplify: $\quad \frac{1+\sin x-1+\sin x}{(1-\sin x)(1+\sin x)} = 2\left(\frac{\sin x}{\cos x}\right)\left(\frac{1}{\cos x}\right)$

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

Pythag: $\quad \frac{2\sin x}{(1-\sin^2 x)} = \frac{2\sin x}{\cos^2 x}$

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

Today's Homework: *Trig Identities Worksheet (both sides)*

TRIG FUNCTIONS UNIT TEST

Review Questions:

Pg. 388 #11

Pg. 413 #11, 13, 14, 15a,b, 17, 19 – 27, 30 – 34

Pg. 418 #3, 5, 9, 11

Test Outline:

Co-terminal angles

Related acute angles

Finding all possible measures of an angle (using RAA, CAST, and Co-terminal angles)

Trig ratios of any angle

Special triangles (finding exact values)

Modelling periodic behavior

Sketching trig functions

Transformations of periodic functions

Trig applications:

- This will include a graph and must come up with your own word problem that corresponds to the given graph. You will also need to come up with the equation from the graph.
- There will be a word problem where you will be given a situation and must come up with the equation and graph it

Trig Identities