

Review Topics and Identities/Formulas

5.1 Pythagorean Identities $\sin^2 x + \cos^2 x = 1$
 $\sec^2 x = \tan^2 x + 1$
 $1 + \cot^2 x = \csc^2 x$

Reciprocal/Quotient Identities
Simplify Trig Expressions
Even/Odd Trig Functions even: $\cos x, \sec x$
 odd: $\sin x, \csc x, \tan x, \cot x$

5.2 Verifying Trig Identities
 -make one side look like the other

5.3 Solving Trig Equations
 -use trig identities
 -factor
 -multi angle solving use co-terminal angles for 'sets' of answers

5.4 Sum and Difference Formulas $\sin(u \pm v) = \sin u \cos v \pm \cos u \sin v$
 $\cos(u \pm v) = \cos u \cos v \mp \sin u \sin v$
 - given angle to split → expand → evaluate
 - given ratios → 's' → expand → substitute ratios → simplify
 - use to solve
 - use to verify


5.5 Power Reducing $\sin^2 x = \frac{1 - \cos 2x}{2}$ $\tan^2 x = \frac{1 - \cos 2x}{1 + \cos 2x}$
 $\cos^2 x = \frac{1 + \cos 2x}{2}$

Double Angles $\sin 2x = 2 \sin x \cos x$ $\tan 2x = \frac{\sin 2x}{\cos 2x}$
 $\cos 2x = \cos^2 x - \sin^2 x$
 $= 2 \cos^2 x - 1$
 $= 1 - 2 \sin^2 x$
 $= \frac{2 \tan x}{1 - \tan^2 x}$

Half Angles $\sin\left(\frac{x}{2}\right) = \pm \sqrt{\frac{1 - \cos x}{2}}$ $\tan\left(\frac{x}{2}\right) = \sqrt{\frac{1 - \cos x}{1 + \cos x}}$
 $\cos\left(\frac{x}{2}\right) = \pm \sqrt{\frac{1 + \cos x}{2}}$
 $= \frac{\sin x}{1 + \cos x}$
 $= \frac{1 - \cos x}{\sin x}$

Use to:
 - verify identities
 - solve equations
 - evaluate, given a ratio

Mar 12-9:19 AM

HOMWORK 

Workbook p 81-82 circled problems
 Workbook p 83

Feb 2-9:51 PM