5.4 Multiple Angle Identities

Target 6C: Solve equations using trigonometric identities

Review Prior Concepts

Solve the trigonometric equation for x.

1) $\cos^2 x - 1 = 0$ **2)** $\tan x - \sec x \cos x = 0$

Double-Angle Identities

$\sin 2A =$ $\cos 2A =$

$\tan 2A =$

Examples

Solve for x on $[0, 2\pi)$.

1) $\sin 2x = \sin x$

2) $\cos 2x = \cos x$

Prove the identity.

1) $\cos 6x = 2\cos^2 3x - 1$ **2)** $2\cot 2x = \cot x - \tan x$

3) $\sin 3x = \sin x \,(3 - 4\sin^2 x)$

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More Practice

Using Double Angle Identities

http://www.intmath.com/analytic-trigonometry/3-double-angle-formulas.php

http://www.ck12.org/trigonometry/Solving-Equations-with-Double-Angle-Identities/lesson/Solving-Trig-Equations-using-Double-and-Half-Angle-Formulas-ALG-II/

https://www.sophia.org/concepts/solving-an-equation-by-applying-a-double-angle-identity

https://www.youtube.com/watch?v=LSh_Ol_XsaE

https://www.youtube.com/watch?v=rF36a8K_3QM

https://www.youtube.com/watch?v=9mfvng-9cr0

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<u>Homework Assignment</u>
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