# 5.4 Multiple Angle Identities

Target 6B: Prove trigonometric identities
Target 6C: Solve equations using trigonometric identities

*Review Prior Concepts*

**Solve the trigonometric equation for $x$ on the interval $[0, 2\pi)$.**

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

## 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

## Homework Assignment

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