

# Unit 09: Trigonometric Identities (Part 1)

Content Area: **Mathematics**  
Course(s): **PreCalc Trig H**  
Time Period: **Semester 1**  
Length: **1.5 weeks**  
Status: **Published**

## Standards - NJCCS/CCSS

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|------------------------------|--|
| CCSS.Math.Content.HSF-TF.C   | Prove and apply trigonometric identities   |
| CCSS.Math.Content.HSF-TF.C.8 | Prove the Pythagorean identity $\sin^2(\theta) + \cos^2(\theta) = 1$ and use it to find $\sin(\theta)$ , $\cos(\theta)$ , or $\tan(\theta)$ given $\sin(\theta)$ , $\cos(\theta)$ , or $\tan(\theta)$ and the quadrant of the angle. |

## Enduring Understandings

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Trigonometric identities can be used to simplify trigonometric expressions.

## Essential Questions

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How can we prove that a trigonometric identity is true?

What are the three basic identities?

What strategies are used when proving trigonometric identities?

## Knowledge and Skills

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$$\sin^2 x + \cos^2 x = 1$$

$$1 + \cot^2 x = \csc^2 x$$

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

SWBAT develop the three pythagorean identities.

SWBAT simplify trigonometric expressions using the identities.

SWBAT prove trigonometric identites.

## **Resources**

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Trigonometry

Authors: Lial, Hornsby, Schneider

Graphing Calculator

[www.desmos.com](http://www.desmos.com)

[www.flipgrid.com](http://www.flipgrid.com)

[www.graphfree.com](http://www.graphfree.com)