

# Unit 02: Inverse Trigonometry Functions

Content Area: **Mathematics**  
Course(s): **Generic Course**  
Time Period: **Semester 1**  
Length: **4 weeks**  
Status: **Published**

## Standards - NJCCS/CCSS

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MA.G-SRT.C.8	Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.
MA.F-TF.A.1	Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.
MA.F-TF.B.5	Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.
MA.F-TF.B.7	Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context.

## Enduring Understandings

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Trigonometry is the study of angle measurement, but is primarily algebraic in nature and has practical applications in everyday work and life.

Radians are an alternative form of angle measurement.

## Essential Questions

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- 1) Will students be able to evaluate the six trig. functions and their inverses using the TI-83 graphing calculator?
- 2) Will students be able to evaluate the six trig. functions and their inverses using radian measurement?
- 3) Will students be able to graph  $y = \sin x$ ,  $y = \cos x$ ,  $y = \sec x$ , and  $y = \csc x$  as well as transformations of these graphs?
- 4) Will students be able to analyze the graphs of  $y = \tan x$  and  $y = \cot x$ ?
- 5) Will students be able to apply the reciprocal, negative angle, and pythagorean identities to balance or simplify expressions and equations?

## Knowledge and Skills

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- Find angles, given trigonometric functions.

- Find the value of trigonometric functions and inverse functions on a calculator.
- Graph trigonometric functions.
- Find the amplitude, period and phase shift of all trigonometric functions.
- Use basic trigonometric identities to balance or simplify expressions and equations.

## **Transfer Goals**

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Recognize and solve practical or theoretical problems involving mathematics, including those for which the solution approach is not obvious, by using mathematical reasoning and strategic thinking.

The inverse of a mathematical function allows for solving complicated equations.

## **Resources**

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Precalculus: Graphical, Numerical, Algebraic 10th Edition

Desmos

Problem-Attic

Classkick

Geogebra