

Unit 02: Inverse Trigonometry Functions

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

Standards - NJCCS/CCSS

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.
MA.G-SRT.C.8	Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.

Enduring Understandings

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

- 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

- 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

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

Precalculus: Graphical, Numerical, Algebraic 10th Edition

Desmos

Problem-Attic

Classkick

Geogebra