

Precalculus Learning Goals - Week 9

This week we're going to continue our section on **Trigonometry**.

The general goals for the section **Trigonometry** are as follows. At the end of this section, students should be able to:

- *Transition between interpretations of trig functions on triangles, the unit circle, and as graphs.*
- *Compute all trig and inverse trig functions for common values.*
- *Define inverse trig functions and explain their domain and range.*
- *Use trig functions to solve for missing quantities involving triangles and model periodic motion.*
- *Use trigonometric identities to simplify and rewrite expressions.*

More specifically, at the end of this week you should be able to:

- Solve basic trig equations, including with factoring.
- Define inverse trig functions.
- Compute inverse trig functions.
- Use inverse trig functions as necessary to express solutions to trig equations.

Sample Problems. Here are some sample problems, of the type that you would do to demonstrate that you've learned the material. These are not the only types of problems you may see – they're just a sample.

- Solve for x : $2\sin^2(x) + \sin(x) - 1 = 0$.
- Compute $\arcsin(-\frac{1}{2})$.
- Solve for x : $3\sin x = \tan x$.
- Define the function $\cos^{-1}(x)$.
- T or F: $\cos^{-1}(\frac{1}{2}) = \frac{\pi}{6}, \frac{11\pi}{6}$.