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: $\cos^{-1}(\frac{1}{2}) = \frac{\pi}{6}, \frac{11\pi}{6}$. 