

Section 6.3 solving Trigonometry Equations

Next, we'll use all of the tools we've covered in our study of trig to solve some equations.

- (a) Solve the equation for  $0 \leq x < 360^\circ$ .
- (b) Solve the equation for  $0 \leq x < 2\pi$ .
- (c) Find all solutions

**Example 1:**  $2 \cos x = \sqrt{3}$  (also state all answers to the problem)

**Example 2:**  $\csc^2 x = 4$

**Example 3:**  $2 \sin(2x) = 1$  for the interval  $[0, 2\pi)$

**Example 4:**  $2 \sin^2 x - 5 \sin x - 3 = 0$

**Example 5:**  $\sin^2 x \cos x = \cos x$

**Example 6:**  $\cos(2x) = 5 \sin^2 x - \cos^2 x$

**Example 7:**  $\sec^2 x + 2 \tan x = 0$

**Example 8:** Solve  $\sin\left(\frac{x}{2} - \frac{\pi}{3}\right) = \frac{1}{2}$  on the interval  $[0, 2\pi)$ .

**Example 9:** Quiz 12 question: Solve the  $\cos(6x) = -1$  on the interval,  $\left[0, \frac{\pi}{2}\right]$ .

**Example 10:** Quiz 12 question: Solve the following equation on the interval  $[0, 2\pi)$ .

$$2\sin^2 x + 15\sin x + 7 = 0$$