

Solving Trig Equations

Goal:

- Can solve trig equations graphically and algebraically.

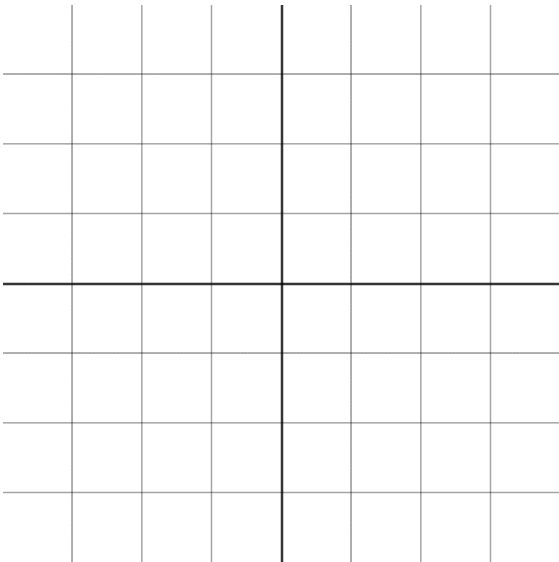
Terminology:

- None

In addition to using algebra to solve trig equations, we can graph the trig equations and look for approximate (or accurate solutions using technology) solutions in the intersections.

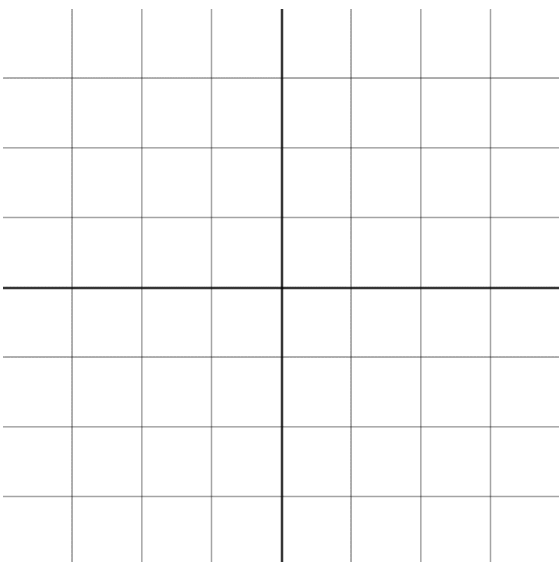
Example: Determine the general solution to the following equation:

$$-2 \sin\left(\frac{\pi}{8}(\theta - 2)\right) = 1$$



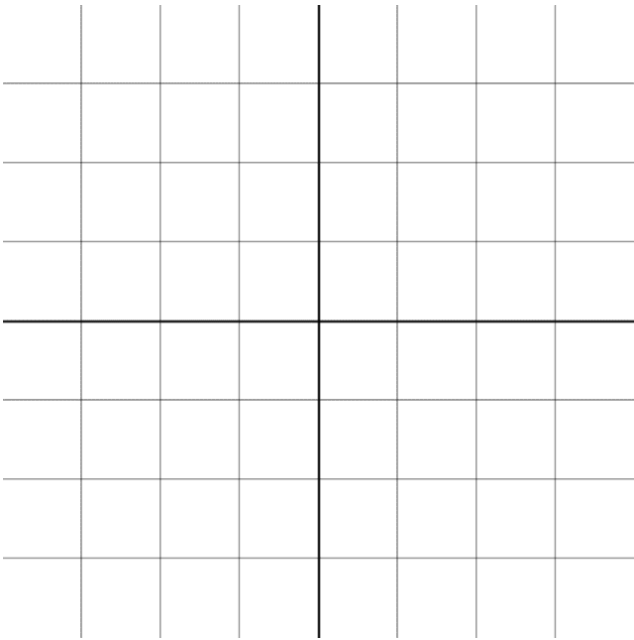
Practice: Find the general solution to the following

$$3 \cos \theta = -2$$



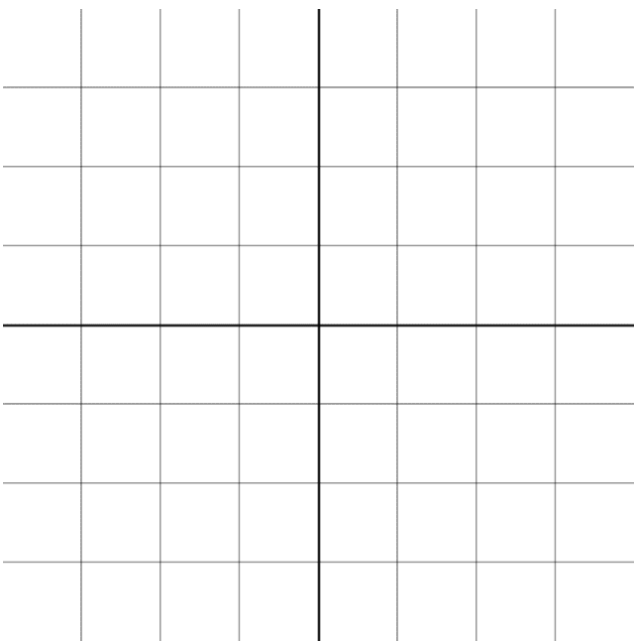
Practice: Find the general solution to the following

$$\csc^2 \theta = \frac{4}{3}$$



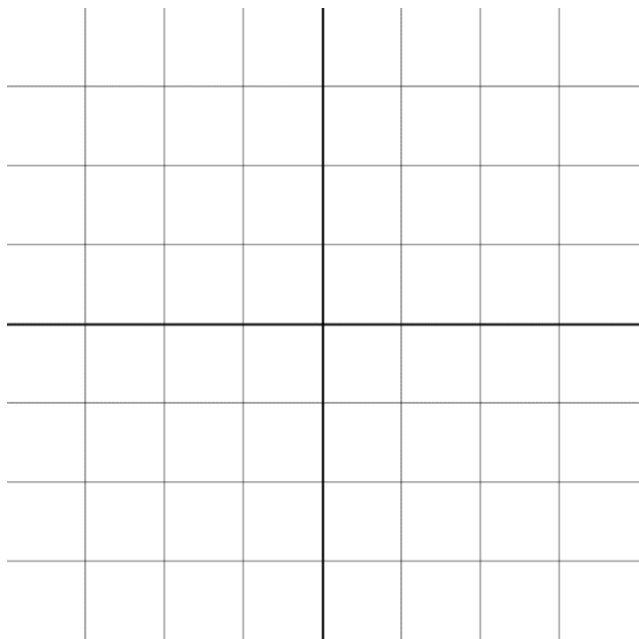
Practice: Find the general solution to the following

$$\cos\left(\frac{1}{2}\left(\theta - \frac{\pi}{3}\right)\right) = \frac{1}{2}$$



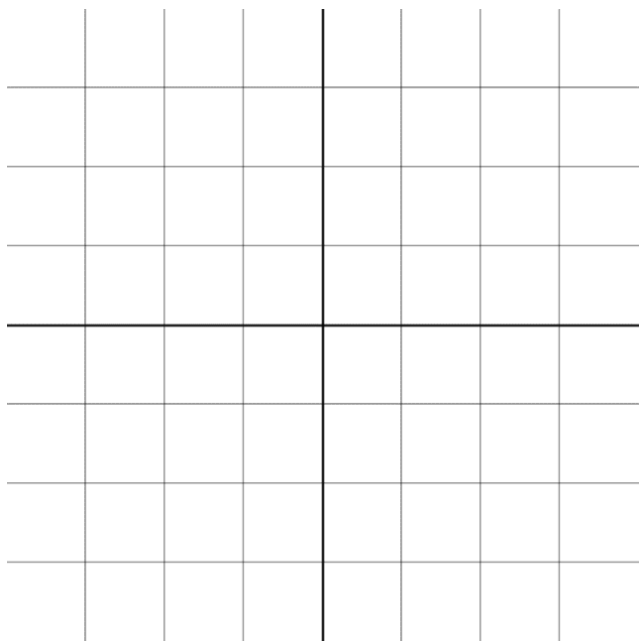
Practice: Find the general solution to the following

$$-\sec\left(\frac{\pi}{3}(\theta + 2)\right) = 2$$



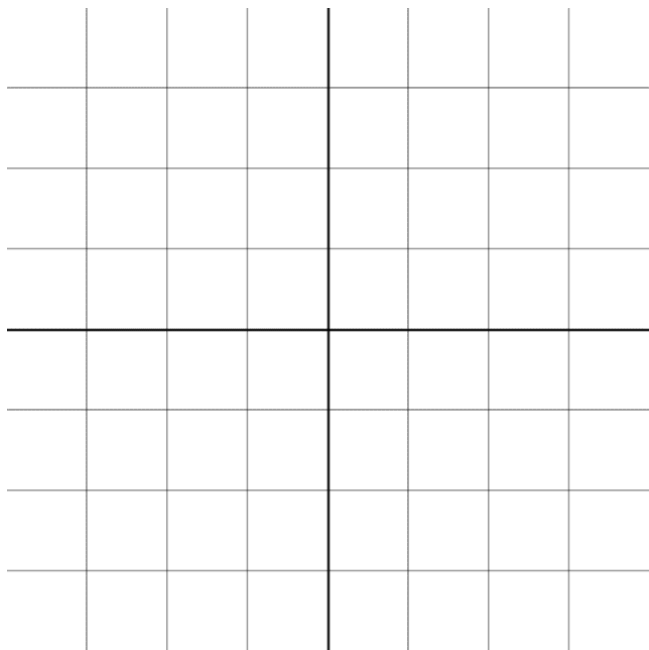
Practice: Find the general solution to the following

$$\cos \theta \cdot \sin^2\left(\frac{\pi}{10}(\theta - 3)\right) = \cos \theta$$



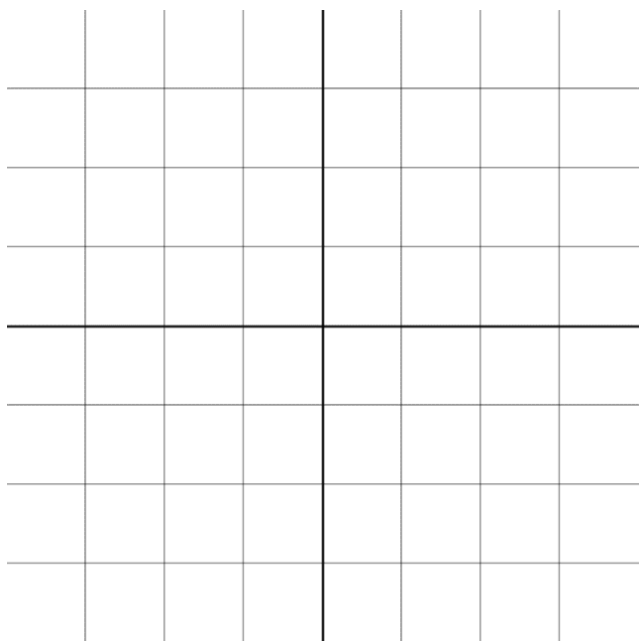
Practice: Find the general solution to the following

$$\csc\left(\frac{\pi}{7}(\theta + 1)\right) = -3$$



Practice: Find the general solution to the following

$$3 \cos^2\left(\frac{1}{5}(\theta - 2)\right) = 1$$



Suggested Practice Problems: 5.4 # 4, 5, 8, 11, 15-23

Textbook Reading: page 266-273
Key Ideas page 274

Next Class: Modelling Trig Functions