

MATH 120: Solving Trig Equations

1. Find all solutions to

$$4 \cos x \sin x - 2 \sin x + 2 \cos x - 1 = 0$$

in the interval $[-\pi/2, \pi/2]$.

2. Find all solutions to

$$\csc^2 x - 2 = 0$$

in the interval $[\pi, 3\pi]$.

3. Find all solutions to

$$3 \sin^2 x + 5 \sin x - 1 = 0.$$

4. Find all the x -intercepts to

$$y = -2 + 7 \sin(3x + 4)$$

in the interval $(-2, -1.5)$.

5. Find all the x -intercepts to

$$y = 8 - 2 \tan\left(\frac{\pi x + 4}{5}\right)$$

6. Graph and label

$$y = 1 - 2 \cos(5\pi x - \pi).$$

7. Graph and label

$$3 + 3 \sin\left(\frac{x}{4} + \frac{1}{2}\right).$$

8. Find all solutions to

$$2 \cos\left(\frac{\pi}{3}(9x^2 - 3x + 2)\right) + 1 = 0$$

in the interval $(-1, 1)$.