

Solving Trigonometric Equations NOTES

DAY 6

Warm up → Solve the following equations

1. $2x^2 + 1 = 3x$

2. $x^2 - 10 = 4x$

3. $x = 3x$

4. $x^2 = 3x$

Solving Trig Equations

1. $2\sin(\alpha) - \sqrt{3} = 0$

Solving Trig Equations on the interval $[0, 2\pi)$.

Step 1: Isolate the trig.

Step 2: Find the unit circle values.

Step 3: Check for extraneous solutions.

2. $9\tan^2(\theta) + 2 = 5$

3. Find the general solution.

$$\sin^3(\theta) = 4\sin^2(\theta)$$

Finding General Solutions.

Step 1: Isolate the trig.

Step 2: Find the unit circle values.

Step 3: Check for extraneous solutions.

Step 4: Write each solution separately with $+ 2\pi k$

4. Find the general solution.

$$2\cos^2 x + 7\cos x = 4$$

5. Find the solution on the interval $[0, 2\pi]$.

$$1 + \cos\theta = \sin\theta$$

6. Find the solution on the interval $[0, 2\pi]$.

$$\sin \beta = \tan \beta$$

7. Find the general solution.

$$12 \sin(x) - 3 = 6$$

8. Find the general solution.

$$\cos^2(\theta) - 5 \cos(\theta) + 2 = 0$$