8-1 Simple Trigonometric Equations

Day 1

Objective: To solve simple trigonometric equations.

Graph $y = \sin x$ in your calculator. Set your viewing window domain $0^\circ \le x \le 360^\circ$ and range from $-2 \le y \le 2$.

1. Put $y_2 = \frac{1}{2}$ in calculator and find the points of intersection.

2. Put $y_3 = -\frac{1}{2}$ in calculator and find the points of intersection.

Repeat with $y = \cos x$.

3. What would you set your viewing window to if you wanted to use radians?

Solve for $0^\circ \le \theta \le 360^\circ$ without using a calculator.

1. $\sin\theta = \frac{1}{2}$

2. $\cos\theta = -2$

3. $\tan\theta = -\frac{\sqrt{3}}{3}$

Solve for $0 \le x \le 2\pi$ without using a calculator.

4. $\tan x = 1$

5. $\sec x = 2$

Solve for θ, giving all solutions.

6. $\csc\theta = -1$

7. $\tan\theta = -1$

Day 2

Warm-up

Solve for $0^\circ \le \theta \le 360^\circ$ without using a calculator and then check your answer with a calculator.

1. $\cos\theta = \frac{1}{2}$

2. $\csc\theta = 2$

Solve for $0 \le x \le 2\pi$ without a calculator and then check using your calculator.

3. $\sin x = -\frac{\sqrt{3}}{2}$

4. $\cot x = \frac{\sqrt{3}}{3}$

Solve for $0^\circ \le \theta \le 360^\circ$. Give answers to the nearest tenth of a degree.

1. $\cos\theta = 0.42$

2. $\csc\theta = \frac{5}{4}$

3. $2\tan\theta + 1 = 0$

4. $4\cot\theta - 8 = -3$

Solve for $0 \le x \le 2\pi$. Give answers to the nearest hundredth of a radian.

5. $\frac{5\csc x}{3} = \frac{9}{4}$