Check-Up:

Solve:

① $\cot\theta = 0.7834, \quad -\frac{\pi}{2} < \theta < -\pi$

② $3\cos x + 5 = 6, \quad -360^\circ \leq x \leq 720^\circ$

③ $2\sin x(1 - \sin x) = 0, \quad -4\pi < x < 4\pi$

Q3

① $\cot\theta = 0.7834$, $-\frac{\pi}{2} < \theta < -\pi$

(Ref $52°$, Q 1,3)

$180-\theta$	θ
$180+\theta$	$360-\theta$

$\theta = 232°$

$-360°$

$-128° = \frac{-128\pi}{180}$

$= -\frac{32\pi}{45}$

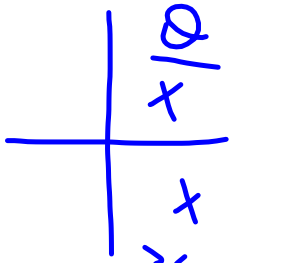
② $3\cos x + 5 = 6$, $-360° \leq x \leq 720°$

$3\cos x = 1$

$\cos x = \frac{1}{3}$

(Ref $71°$, QI, IV)

$+360$ $+360$



$\theta = \pm 71°, \pm 289°, 431°, 649°$

③ $2\csc x(1-\csc x)=0, \quad -4\pi<x<4\pi$

$\frac{6}{6}\omega = \frac{12}{6}$

$2\csc x=0$ or $1-\csc x=0$

$+2\pi=\frac{4\pi}{2}$

$(0,1)$

$\csc x=0$

Reciprocal of y-coordinate to be $=0$

$-\csc x=-1$

$\csc x=1$

$x=\frac{\pi}{2}, \frac{5\pi}{2}, -\frac{3\pi}{2}, -\frac{7\pi}{2}$

$(-1,0)$ $(1,0)$ $(0,y)$

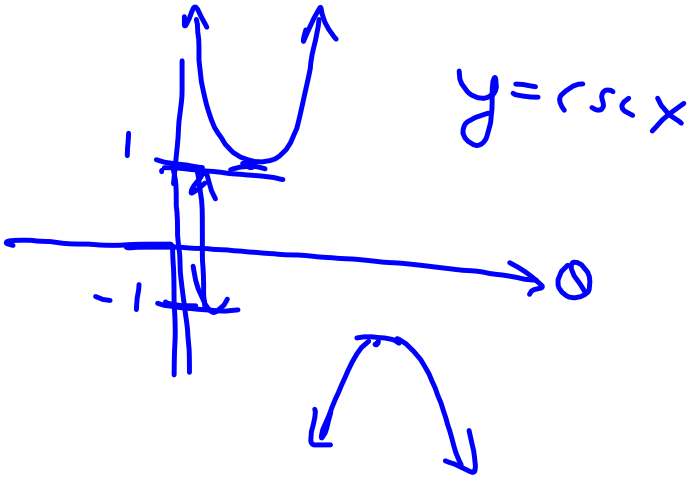
$\csc x=\frac{r}{y}$

$\sin x=\frac{y}{r}=$ und.

$\csc x=\frac{1}{0}$ Impossible

$\frac{1}{1}=$ und

$\varnothing$



$y=\csc x$

Let's move onto QUADRATIC trigonometric equations...

...Pre-Calculus 110

- What strategies can we use to solve quadratic equations?
- Quadratic trigonometric equations will ultimately become TWO linear trigonometric equations.

Solve: $2x^2 + x = 1$

$2x^2+x-1=0$

$2x^2+2x-x-1=0$

$2x(x+1)-1(x+1)=0$

$(x+1)(2x-1)=0$

$x+1=0$ or $2x-1=0$

$x=-1$ $2x=1$

$x=\frac{1}{2}$

or...

Quadratic Formula

$$x=\frac{-b\pm\sqrt{b^2-4ac}}{2a}$$

$2x^2+x-1=0$

$a=2, b=1, c=-1$

$$x=\frac{-1\pm\sqrt{1-4(2)(-1)}}{2(2)}$$

$$x=\frac{-1\pm\sqrt{9}}{4}$$

$$x=\frac{-1\pm3}{4}$$

$x=\frac{2}{4}$ or $x=\frac{-4}{4}$

$x=\frac{1}{2}$ $x=-1$

Solve: $2\sin^2 x+\sin x=1,\ 0\le x\le 4\pi$

Let $m=\sin x$

$2m^2+m=1$

$m=-1$ or $m=\frac{1}{2}$

$(y=-1)$

$\sin x=-1$

$\pi-\theta$ θ

$(0,-1)$

$x=\frac{3\pi}{2}, \frac{7\pi}{2}$

$\frac{3\pi}{2}+2\pi$

$\frac{3\pi}{2}+\frac{4\pi}{2}$

$\frac{7\pi}{2}$

$\sin x=\frac{1}{2}$

(Ref $\frac{\pi}{6}$ $30°$, Q1,2)

$x=\frac{\pi}{6}, \frac{5\pi}{6}$

Attachments

Worksheet - Sketching Angles in Radians.doc

Warm-Up - Intro to Limits.docx

Review - Factoring.pdf

Worksheet - Factoring Review.doc