

Questions from Homework

⑧ d) $1 - \sin\theta = 2\sin^2\theta$ $\frac{2}{2} \times \frac{-1}{1} = -\frac{2}{1}$
 $\frac{2}{2} + \frac{-1}{1} = 1$

$$0 = 2\sin^2\theta + \sin\theta - 1$$

$$0 = (2\sin^2\theta + 2\sin\theta)(\sin\theta - 1)$$

$$0 = 2\sin\theta(\sin\theta + 1) - 1(\sin\theta + 1)$$

$$0 = (2\sin\theta - 1)(\sin\theta + 1)$$

$$2\sin\theta - 1 = 0$$

$$2\sin\theta = 1$$

$$\sin\theta = \frac{1}{2} \quad \text{ref} = 30^\circ$$

$$\sin\theta + 1 = 0$$

$$\sin\theta = -1$$

$$\theta = 270^\circ$$

$$\theta = -90^\circ$$

<u>Quad 1</u>	<u>Quad 2</u>
$\theta = 30^\circ$	$\theta = 150^\circ$
$\Leftrightarrow \theta = -330^\circ$	$\theta = -210^\circ$

⑧ e) $2\sin^2\theta + 5\sin\theta - 3 = 0$ $\frac{-1 \times 6 = -6}{-1 + 6 = 5}$

$$(2\sin^2\theta - \sin\theta)(6\sin\theta - 3) = 0$$

$$\sin\theta(2\sin\theta - 1) + 3(2\sin\theta - 1) = 0$$

$$(2\sin\theta - 1)(\sin\theta + 3) = 0$$

$$2\sin\theta - 1 = 0$$

$$2\sin\theta = 1$$

$$\sin\theta = \frac{1}{2} \quad \text{ref} = 30^\circ$$

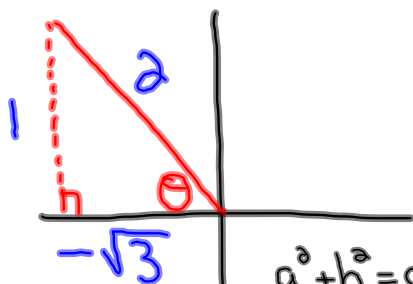
$$\sin\theta + 3 = 0$$

$$\sin\theta = -3$$

Not Possible

<u>Quad 1</u>	<u>Quad 2</u>
$\theta = 30^\circ$	$\theta = 150^\circ$
$\Leftrightarrow \theta = -330^\circ$	$\theta = -210^\circ$

③



• θ is in 2nd Quad

• $\tan \theta = -\frac{1}{\sqrt{3}}$ opp
adj

$$\begin{aligned} a^2 + b^2 &= c^2 \\ (1)^2 + (\sqrt{3})^2 &= c^2 \\ 1 + 3 &= c^2 \\ 4 &= c^2 \\ \boxed{2} &= c \end{aligned}$$

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

$$\csc \theta = 2$$

$$\cos \theta = -\frac{\sqrt{3}}{2}$$

$$\sec \theta = -\frac{2}{\sqrt{3}} = -\frac{2\sqrt{3}}{3}$$

$$\tan \theta = -\frac{1}{\sqrt{3}} = -\frac{\sqrt{3}}{3}$$

$$\cot \theta = -\sqrt{3}$$

$$\textcircled{1} \text{ c) } -323148$$

$$\textcircled{1} -323148 \div 360 = -897.6\bar{3}$$

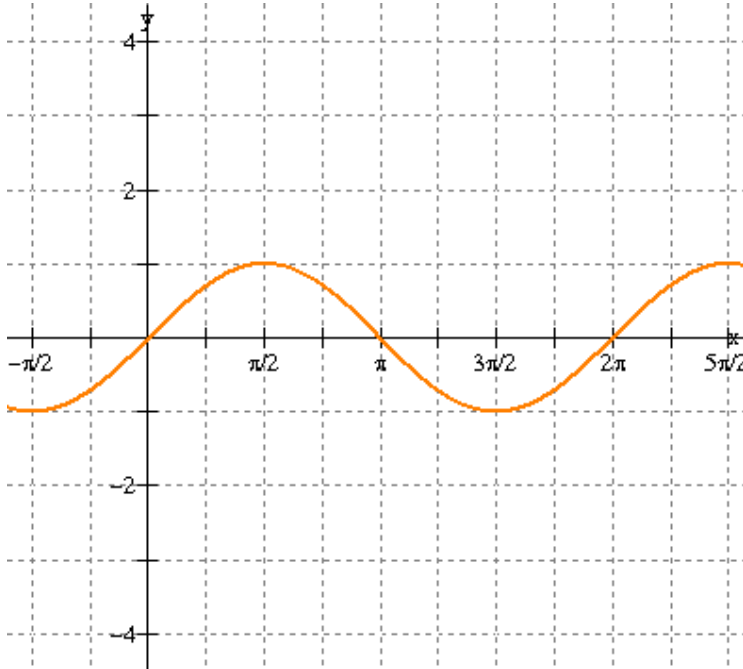
$$\textcircled{2} -897.6\bar{3} - (-897) = -0.6\bar{3}$$

$$\textcircled{3} -0.6\bar{3} \times 360 = -228^\circ$$

$$* \textcircled{4} -228 + 360 = \boxed{132^\circ} \quad \leftarrow \text{Principal Angle}$$

Graphs of Other Trig Functions

$$y = \sin \theta$$



What would the graph of $\csc \theta$ look like?

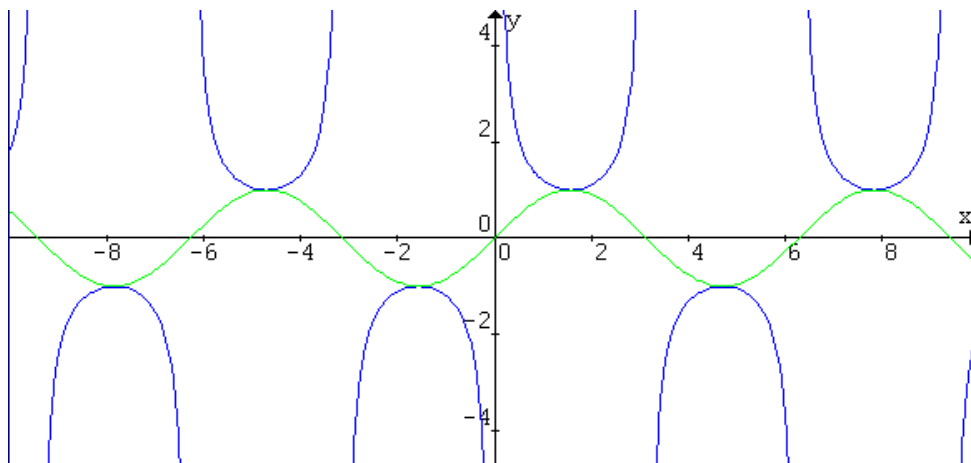
REMEMBER:

$$\csc \theta = \frac{1}{\sin \theta}$$

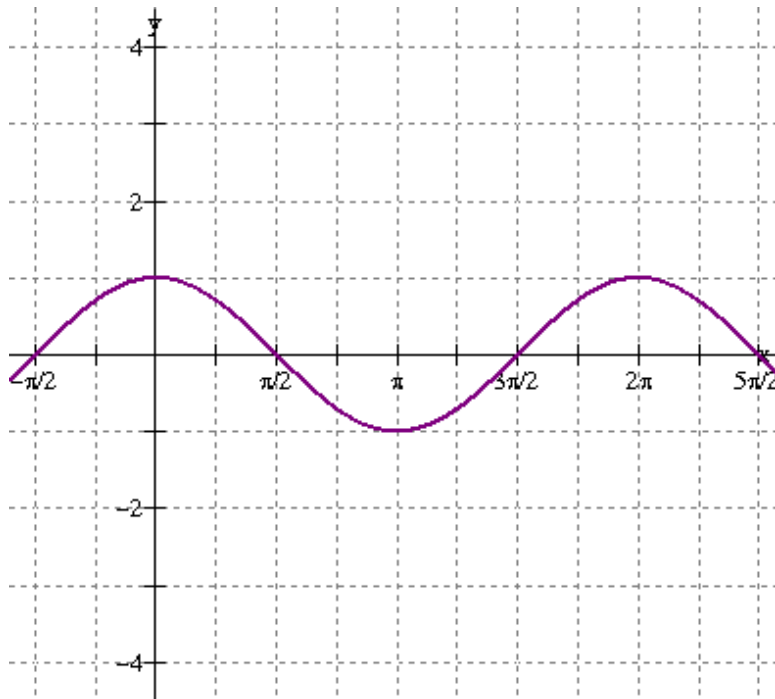
where $\sin x = 0$,
 $\csc x$ is undefined

$$y = \sin x$$

$$y = \csc x$$



$$y = \cos \theta$$



What would the graph of $\sec \theta$ look like?

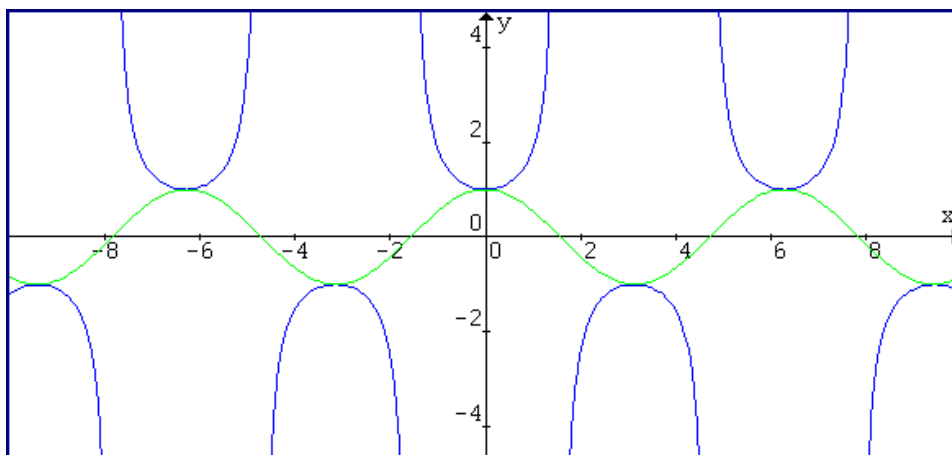
REMEMBER:

$$\sec \theta = \frac{1}{\cos \theta}$$

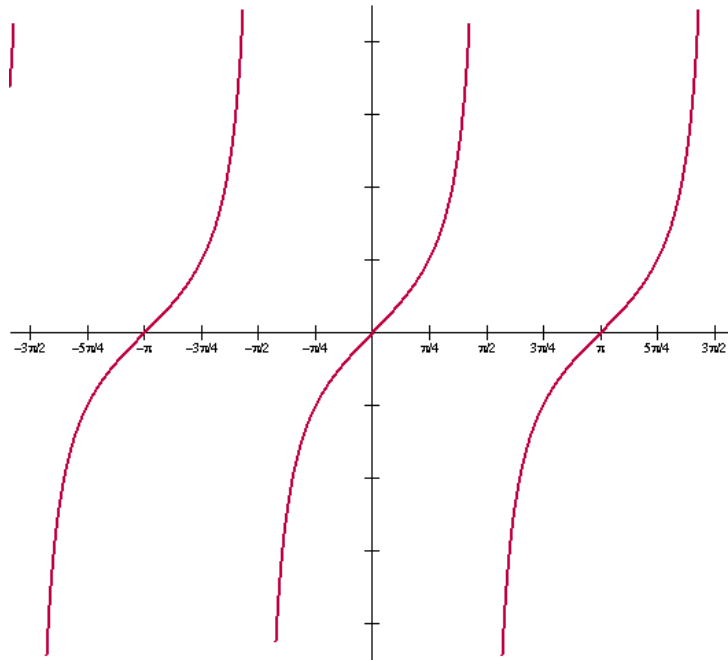
where $\cos x = 0$,
 $\sec x$ is undefined

$$y = \cos x$$

$$y = \sec x$$



$$y = \tan \theta$$



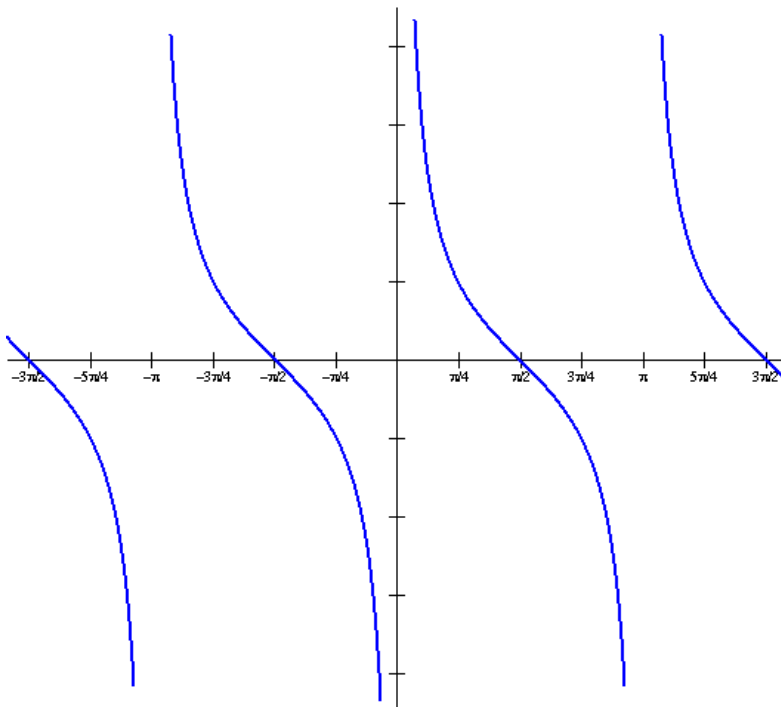
What would the graph of $\cot \theta$ look like?

REMEMBER:

$$\tan x = \frac{1}{\cot x}$$

where $\tan x = 0$,
 $\cot x$ is undefined

$$y = \cot \theta$$



Homework