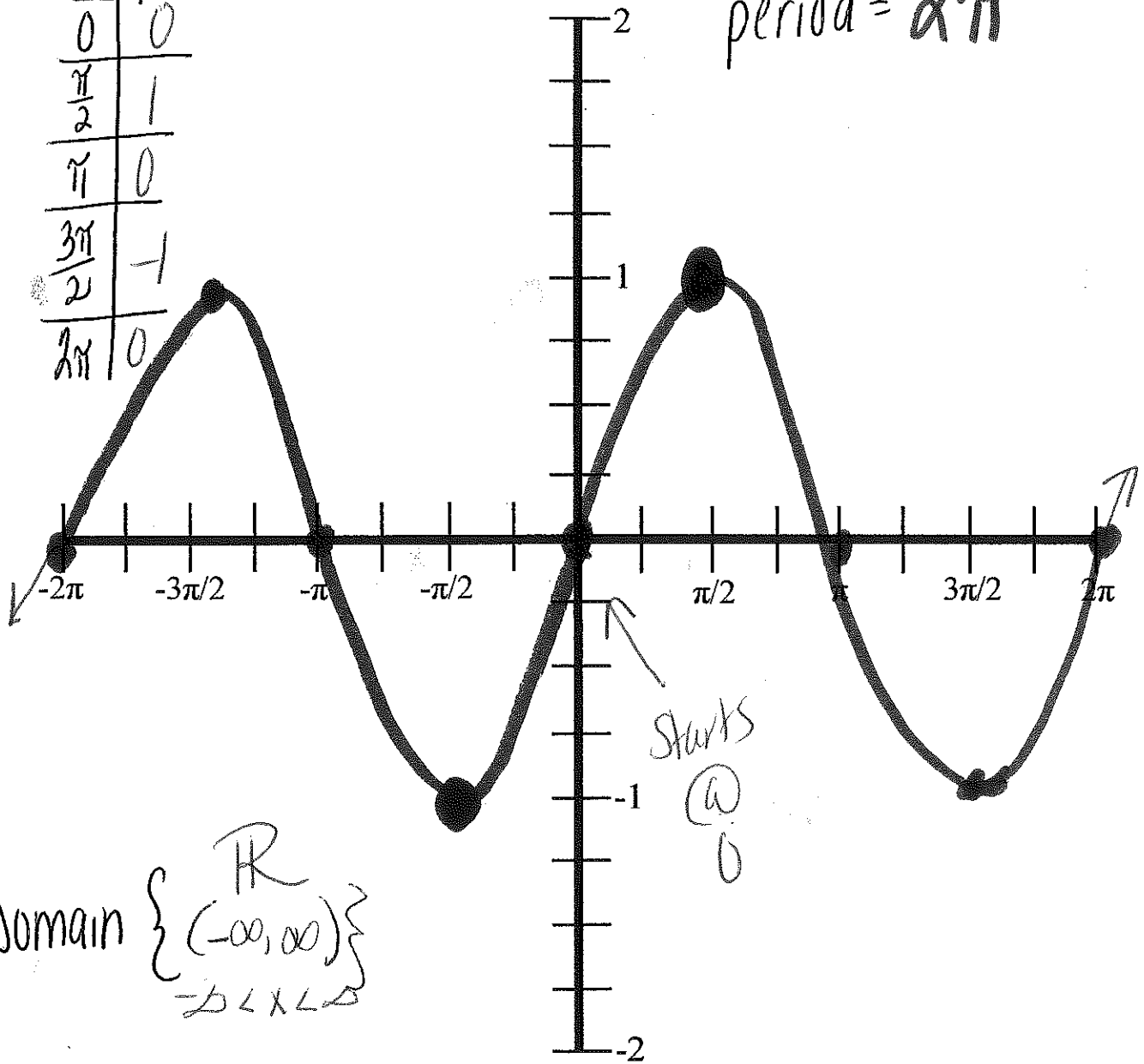


$y = \sin x$ starts @ 0

x	y
0	0
$\frac{\pi}{2}$	1
π	0
$\frac{3\pi}{2}$	-1
2π	0

Cycle
period = 2π



Domain $\{ \mathbb{R} \}$
 $(-\infty, \infty)$
 $-\infty < x < \infty$

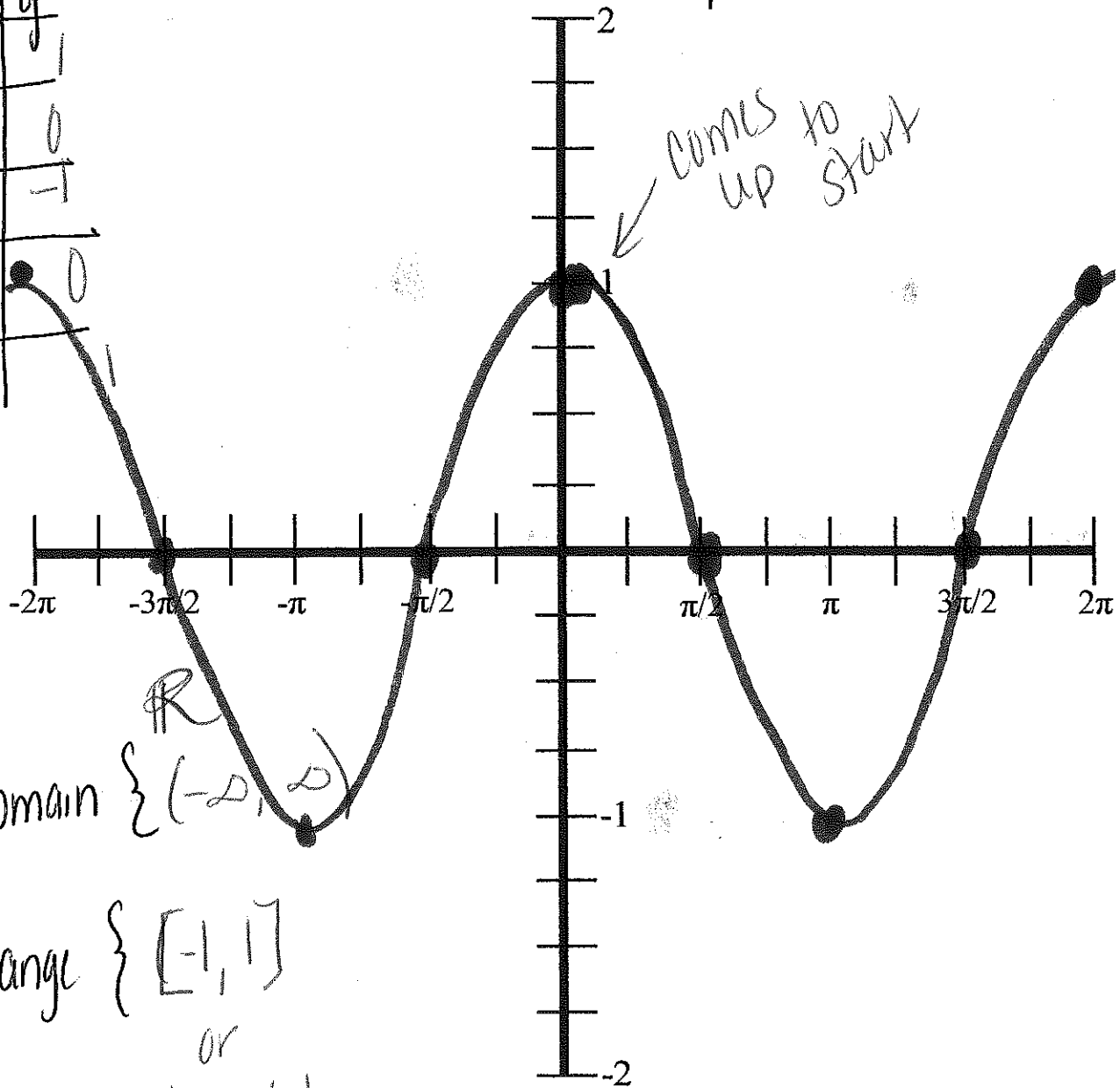
Range $\{ [-1, 1] \}$
 $-1 \leq y \leq 1$
EmbeddedMath.com

Why is why odd?
 $\sin(-x) = -\sin x$

$y = \cos x$ comes up @ 0

cycle period =

x	y
0	1
$\pi/2$	0
π	-1
$3\pi/2$	0
2π	1



Domain \mathbb{R} $\{(-\infty, \infty)$

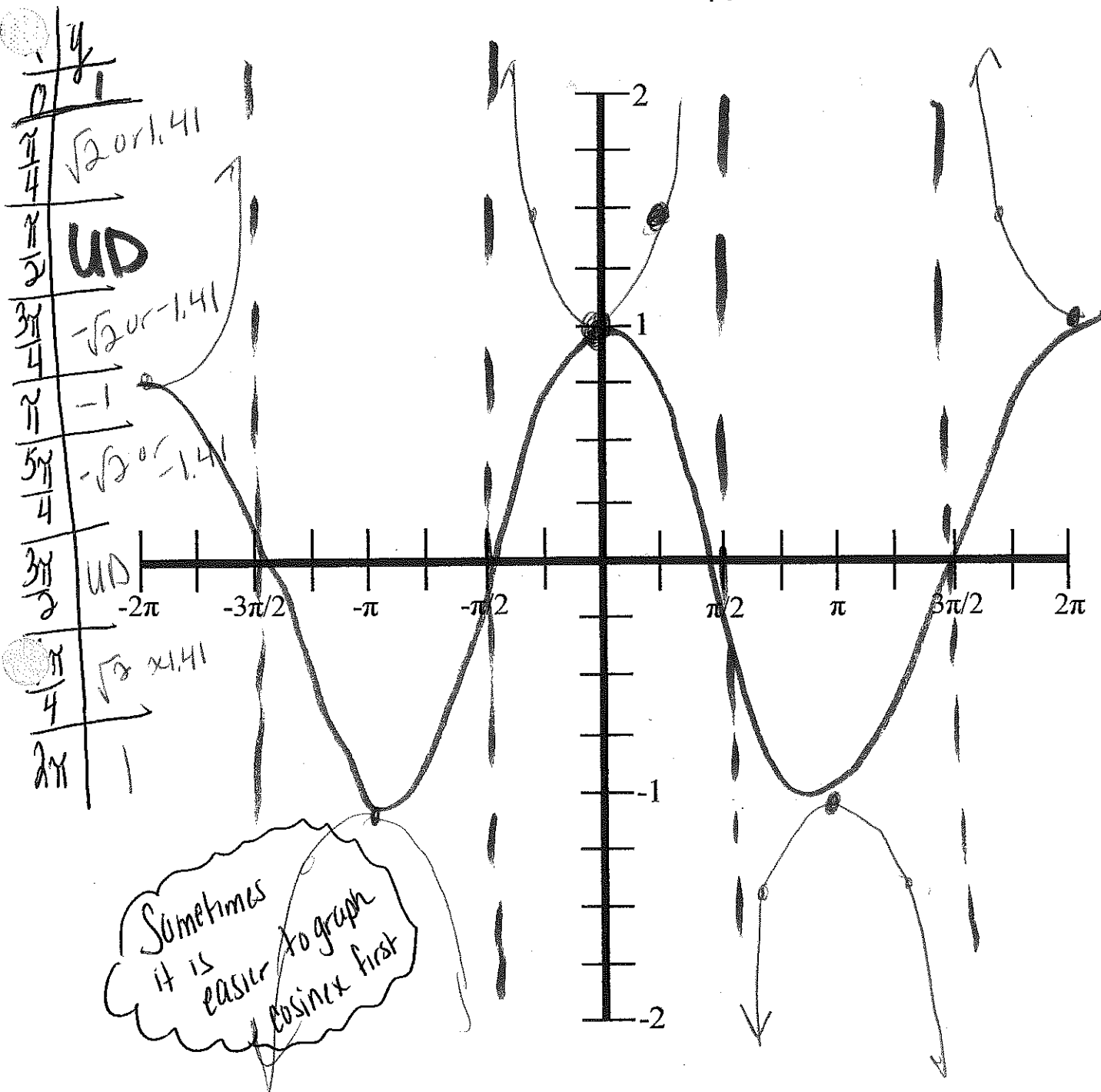
Range $\{[-1, 1]$
or $-1 \leq y \leq 1$

EmbeddedMath.com

Why $f(x) = f(-x)$ even?

$$y = \sec x = \frac{1}{\cos x}$$

Period: 2π



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Domain:

\mathbb{R}

Vertical Asymptotes?

$x \neq \frac{\pi}{2} + n\pi$

Range:

$y \geq 1$ or $y \leq -1$

$x \neq$

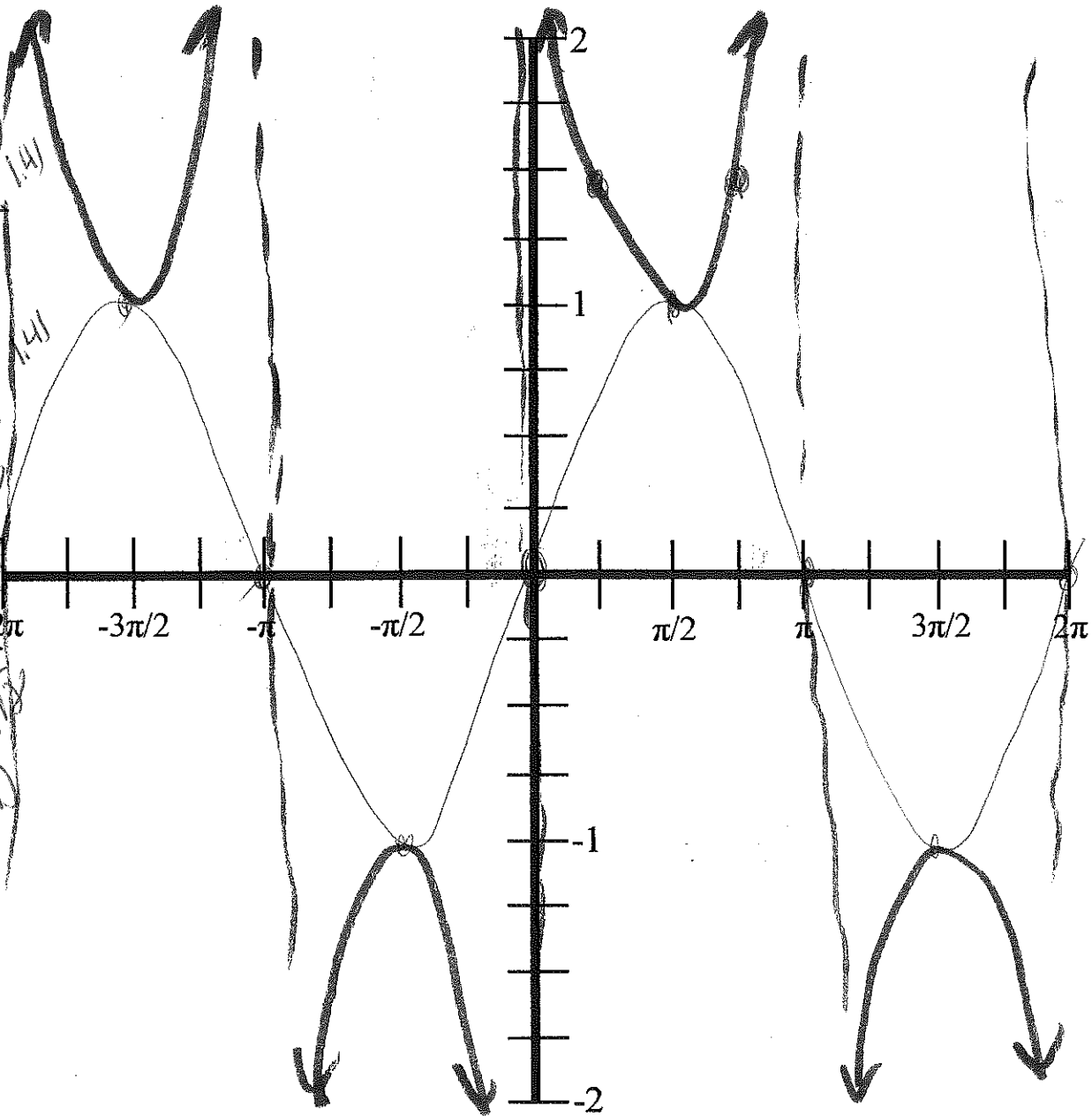
Why even?

$y = \csc x \rightarrow \frac{1}{\sin x}$

Easier to graph $\sin x$ first

Period: 2π

x	y
0	UD
$\frac{\pi}{4}$	$\frac{1}{\sqrt{2}}$
$\frac{\pi}{2}$	1
$\frac{3\pi}{4}$	$\frac{1}{\sqrt{2}}$
π	UD
$\frac{5\pi}{4}$	$-\frac{1}{\sqrt{2}}$
$\frac{3\pi}{2}$	-1
$\frac{7\pi}{4}$	$-\frac{1}{\sqrt{2}}$
2π	UD



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Domain
Range

\mathbb{R}

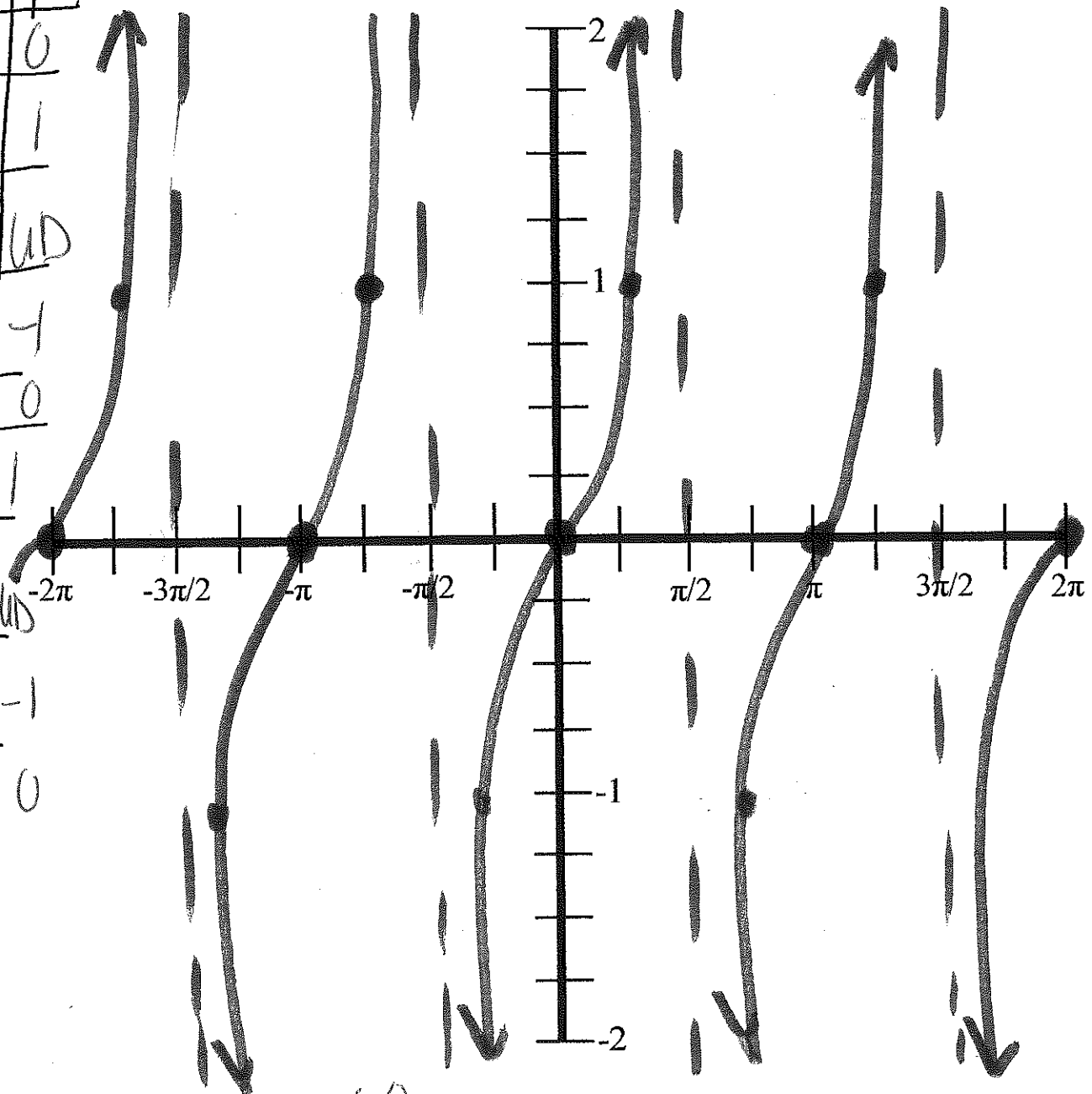
Vertical Asymptotes?

$y \geq 1 \cup (-\infty, -1]$ $x \neq \pi + n\pi$

Why not?

$y = \tan x$ increasing left to right period = π

x	y
0	0
$\frac{\pi}{4}$	1
$\frac{\pi}{2}$	UD
$\frac{3\pi}{4}$	-1
π	0
$\frac{5\pi}{4}$	1
$\frac{3\pi}{2}$	UD
$\frac{7\pi}{4}$	-1
2π	0



$-\infty < x < \infty$

\mathbb{R} or EmbeddedMath.com

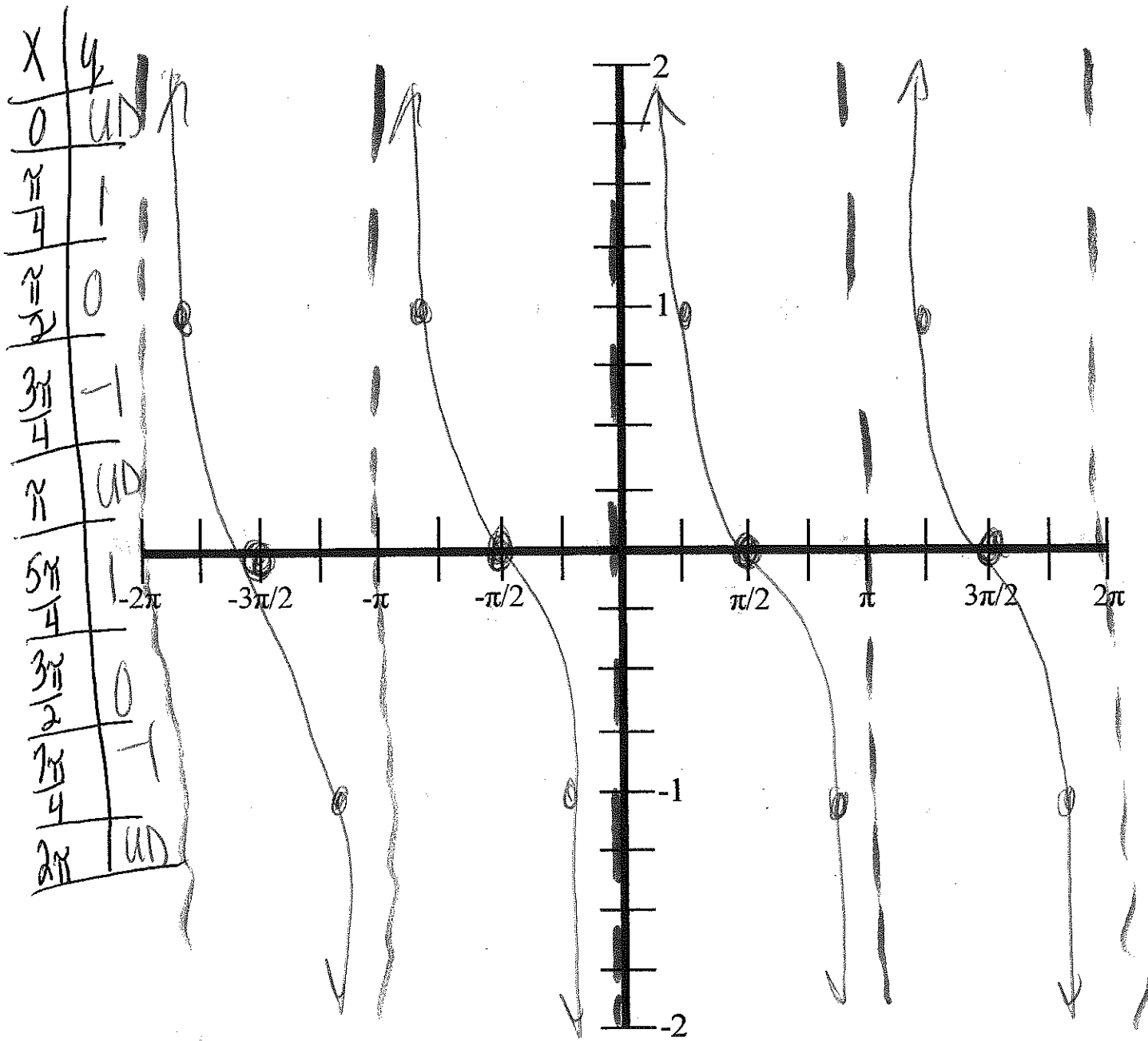
Domain $\{(-\infty, \infty) \mid x \neq \frac{\pi}{2} + n\pi\}$ Vertical Asymptotes?

Range $\{ \mathbb{R} (-\infty, \infty) \}$

$-\infty < y < \infty$

Why odd?

$y = \cot x$ decreasing



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Domain $\{ \mathbb{R} (-\infty, \infty) \}$ $x \neq \pi + n\pi$

n is an integer

Range $\{ \mathbb{R} (-\infty, \infty) \}$

Why odd?