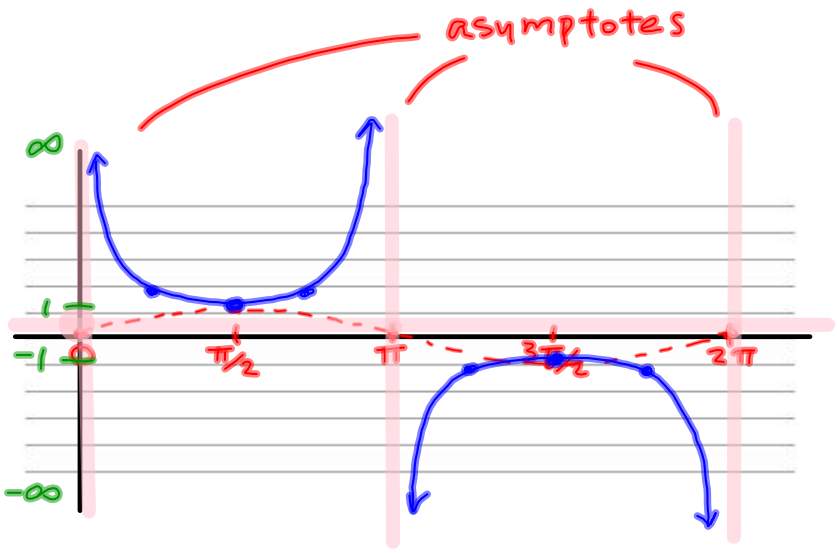
Investigating the Cosecant Function

x	$y_1=\sin x$	$y_2=\csc x$
0	0	undef.
$\pi/4$	0.7	1.4
$\pi/2$	1	1
$3\pi/4$	0.7	1.4
π	0	undef.
$5\pi/4$	-0.7	-1.4
$3\pi/3$	-1	-1
$7\pi/4$	-0.7	
2π	0	undef.



One phase:

D: $(0,\pi)\cup(\pi,2\pi)$

R: $(-\infty,-1]\cup[1,\infty)$

To graph a cosecant function.

1. Sketch sin w/ transformations.
2. Draw asymptotes.
3. Draw cosecant.

Graphing Cosecant

Graph 1 period and state the domain and range of that period.

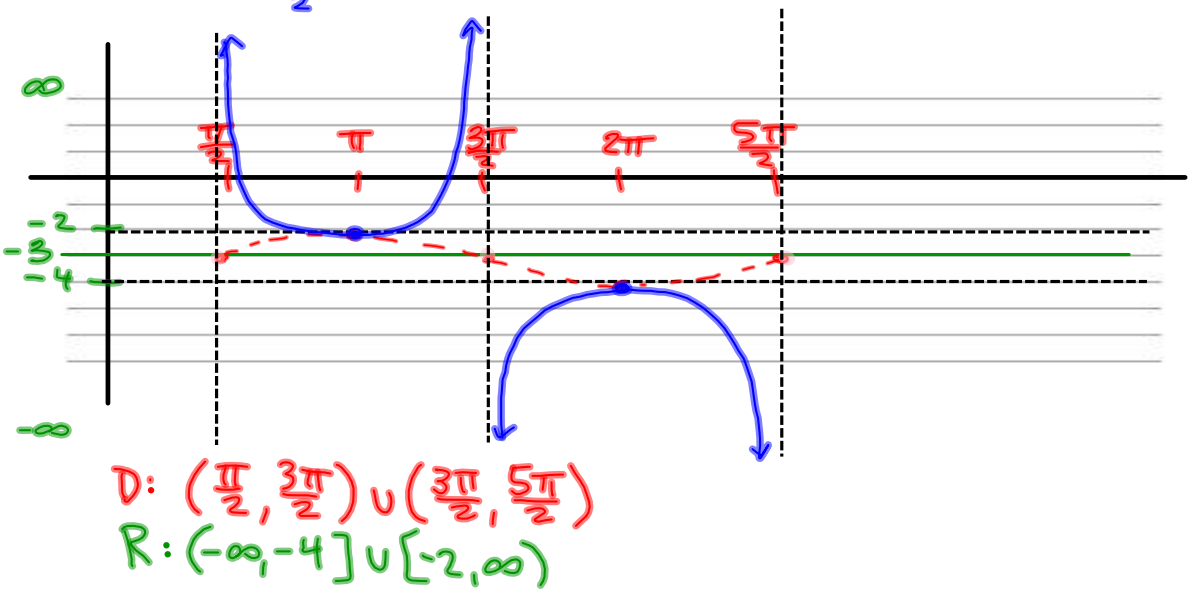
$$y=\csc\left(x-\frac{\pi}{2}\right)-3$$

V.S. $=-3$

P.S. $=\frac{\pi}{2}$

$x-\frac{\pi}{2}=0$ $\quad x=\frac{\pi}{2}$

$x-\frac{\pi}{2}=2\pi$ $\quad x=\frac{5\pi}{2}$



D: $(\frac{\pi}{2},\frac{3\pi}{2})\cup(\frac{3\pi}{2},\frac{5\pi}{2})$

R: $(-\infty,-4]\cup[-2,\infty)$