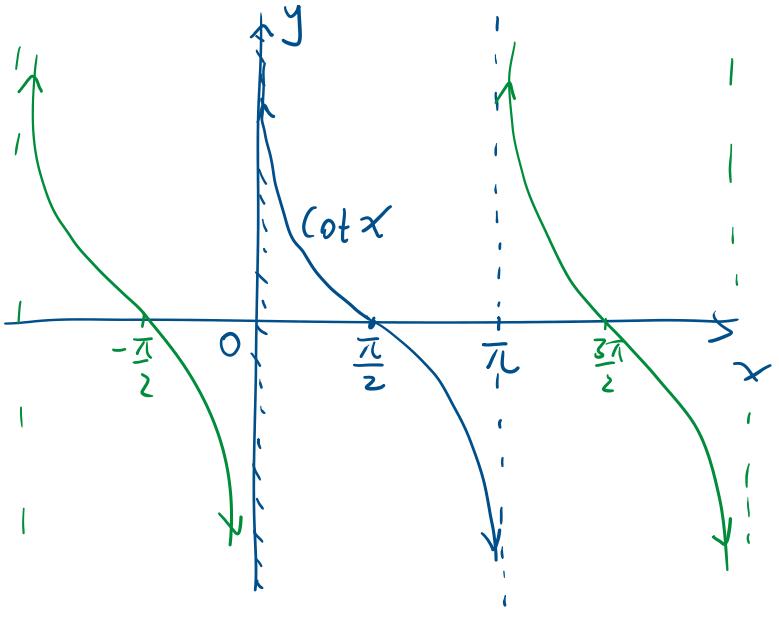
ii. Cot

Cotangent is similar to tangent

$\cot x = \frac{1}{\tan x}$ ← help you to remember

x	y
0	∞
$\frac{\pi}{6}$	$\sqrt{3}$
$\frac{\pi}{3}$	$\frac{\sqrt{3}}{3}$
$\frac{\pi}{2}$	0
π	$-\infty$

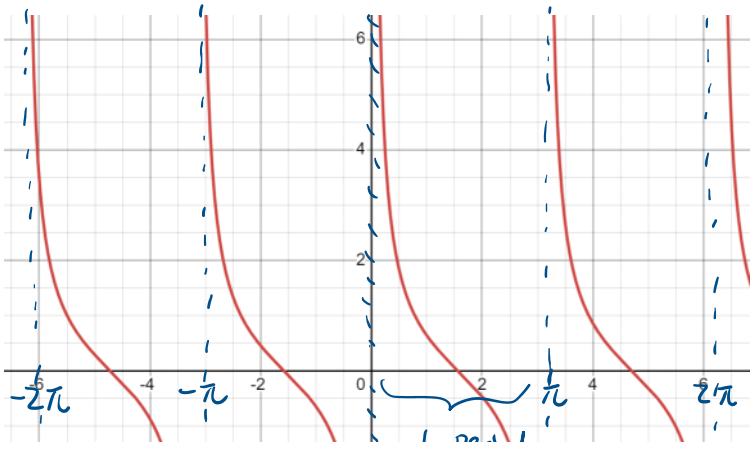


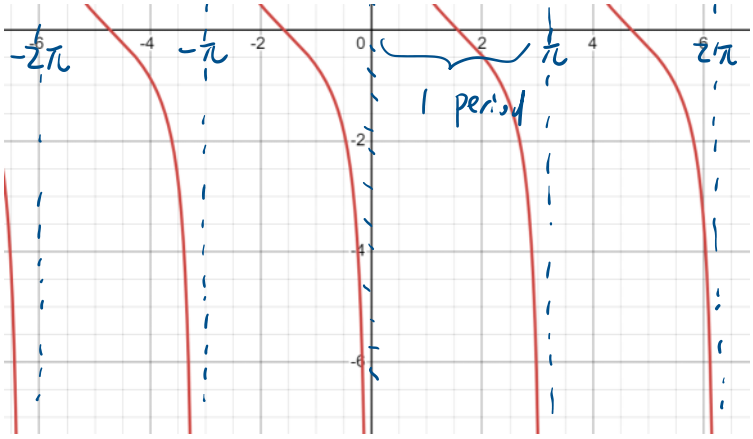
P: $0 \le x \le \pi$

Domain: $(-\infty, \infty) - \pi n$, where n is an integer.

Range: $(-\infty, \infty)$

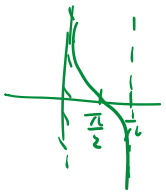
eg.





All of the transformation property apply.

Connect to:



eg. Graph $y = \cot \frac{1}{2}x + 1$ for one period.

Sol: P: $0 \le \frac{1}{2}x \le \pi$

$\times 2 \quad \times 2 \quad \times 2$

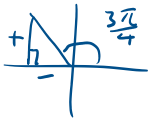
$0 \le x \le 2\pi$

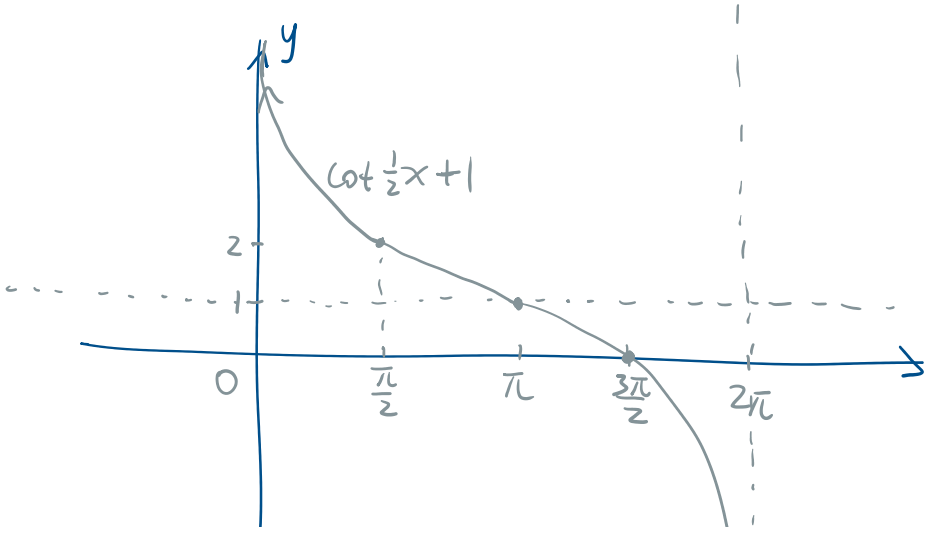
$\frac{2\pi - 0}{4} = \frac{2\pi}{4} = \frac{\pi}{2}$

	x_0	x_1	x_2	x_3	x_4
x	0	$\frac{\pi}{2}$	π	$\frac{3\pi}{2}$	2π
$\frac{1}{2}x$	0	$\frac{\pi}{4}$	$\frac{\pi}{2}$	$\frac{3\pi}{4}$	π
$\cot \frac{1}{2}x$	∞	1	0	-1	$-\infty$
$\cot \frac{1}{2}x + 1$	∞	2	1	0	$-\infty$

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

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

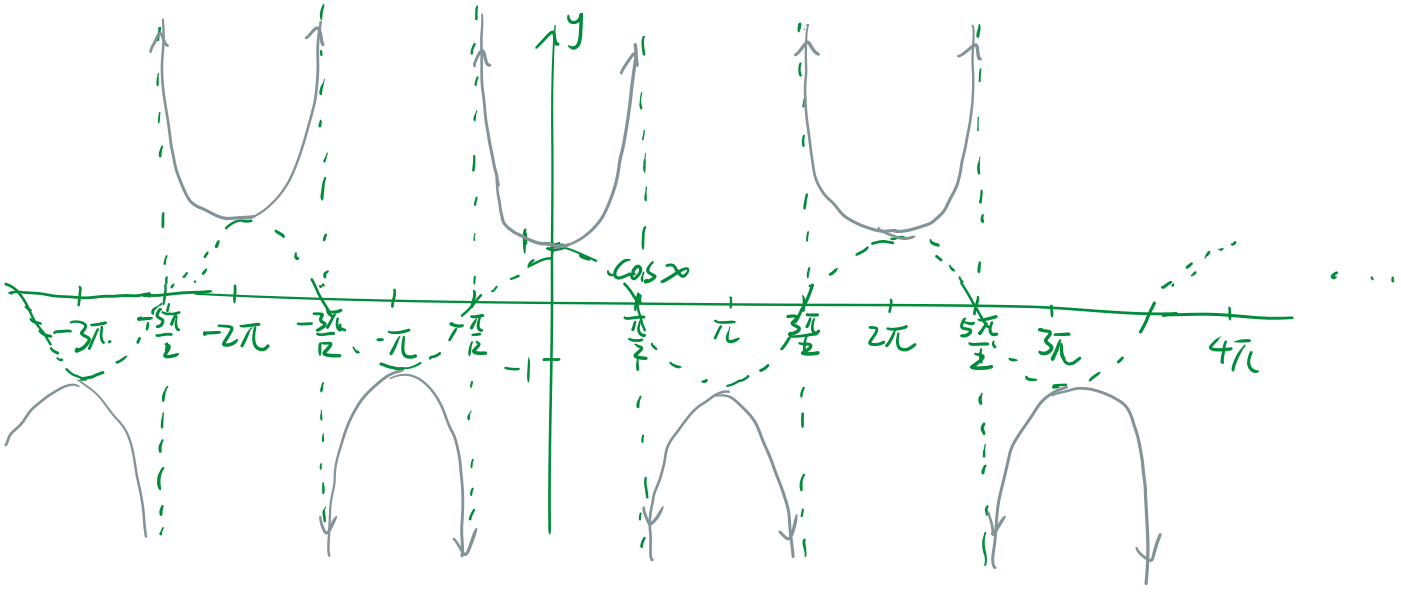
$\cot \frac{3\pi}{4}$ 



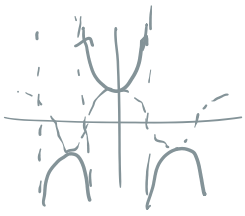
iii Sec x and csc x

Similarly, we have two more trig fcts

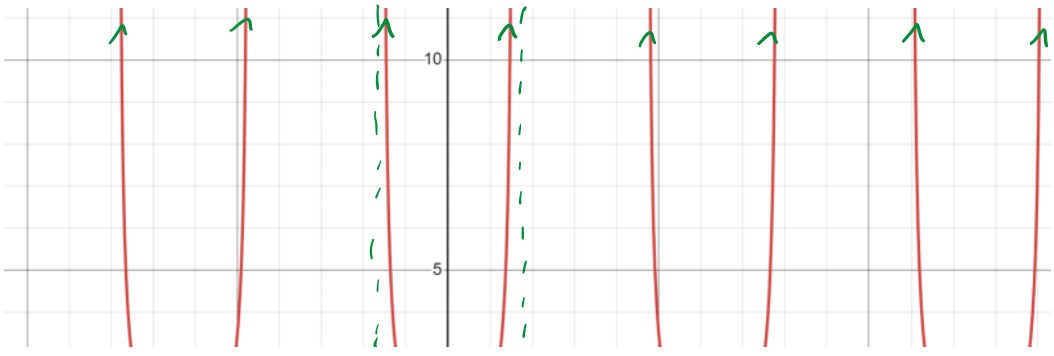
$\sec x = \frac{1}{\cos x}$ ← learn the pattern below

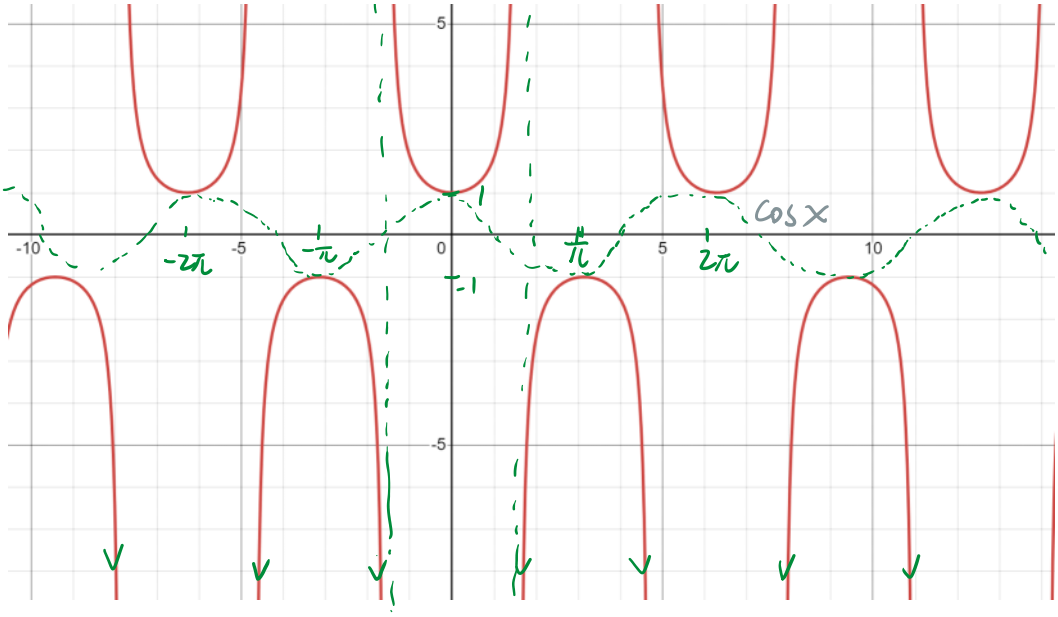


This would help: "



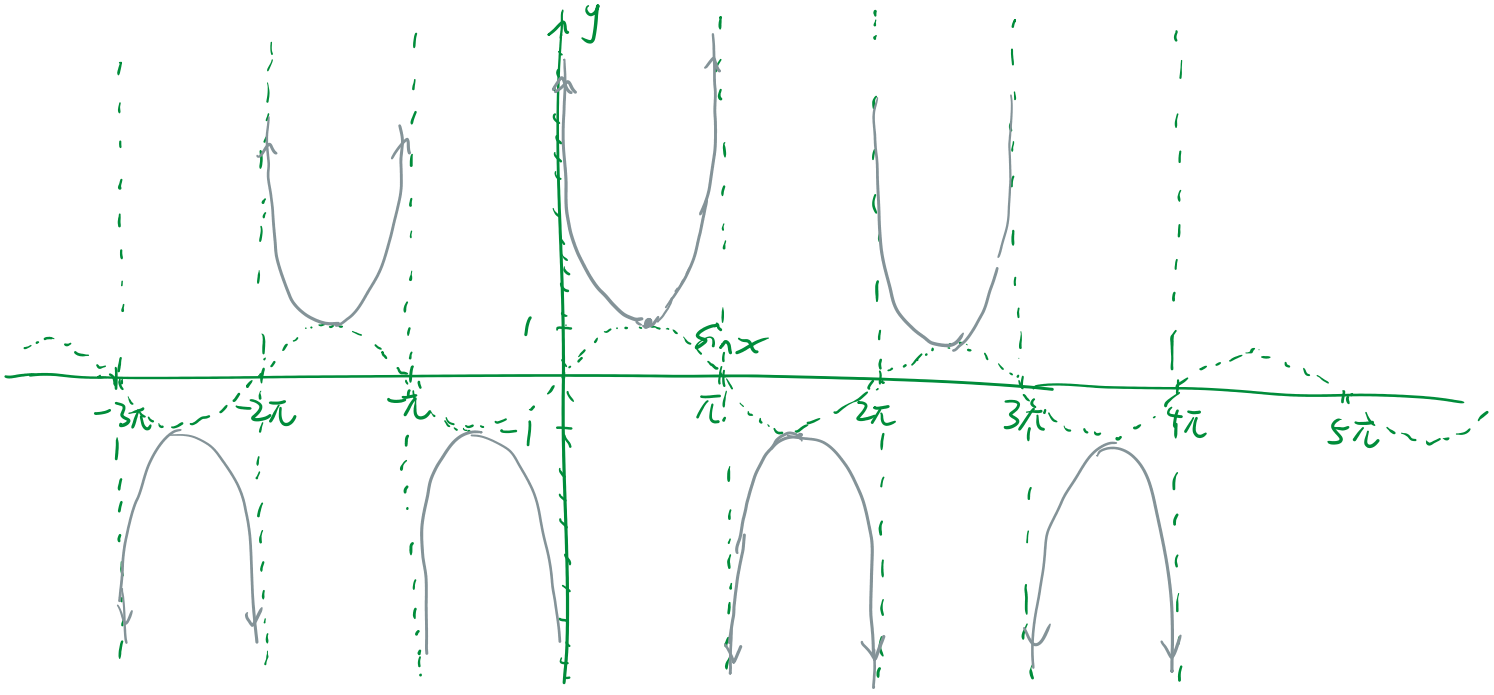
"



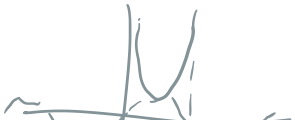


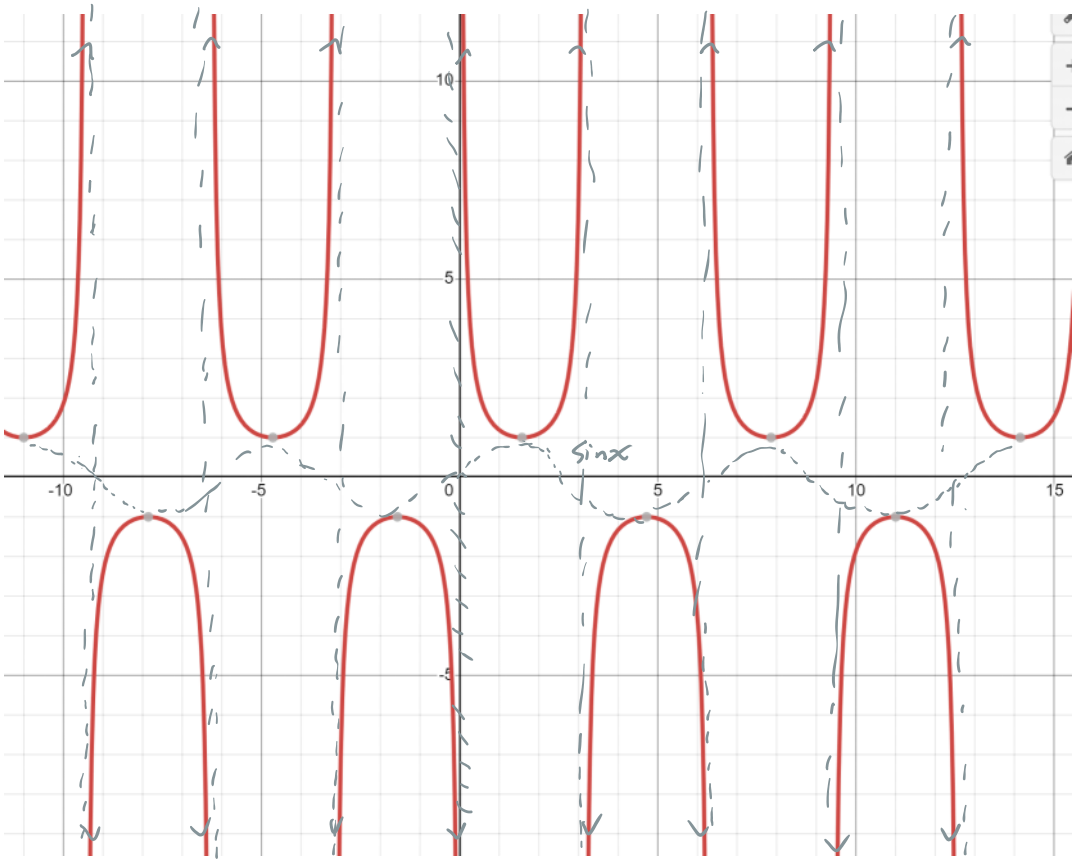
csc x :

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



This would help




10
5
-5
-10
-5
0
5
10
15
sinx