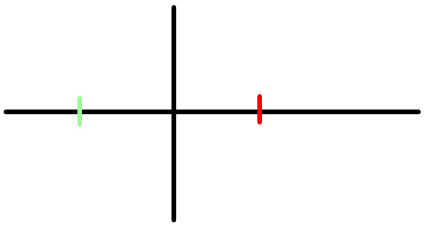
# Chapter 8

I can graph tangent and cotangent functions.

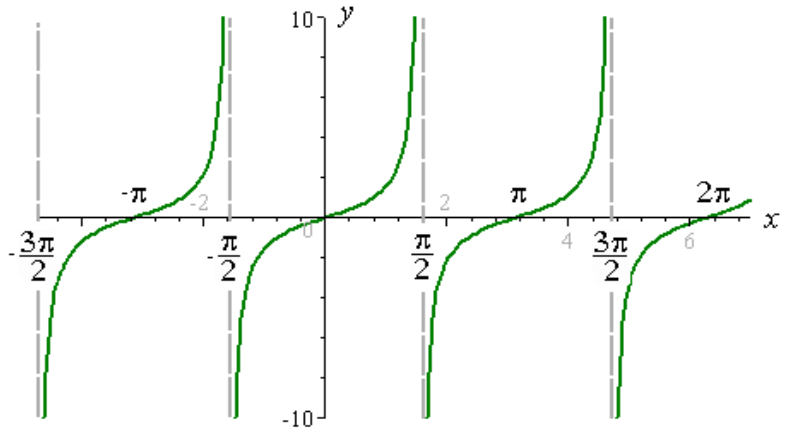
the last lesson (dun dun dun)

## Steps for Tangent graph:

1. Find the period by using $\frac{\pi}{B}$.
2. Multiply the period by $\pm\frac{1}{2}$.
3. Perform any horizontal shifts.
4. Draw the vertical asymptotes.
5. Perform any vertical shifts.



# Tangent




**1.)** $y = \tan x$

$\frac{\pi}{1} \cdot \frac{1}{2} = \frac{\pi}{2}$

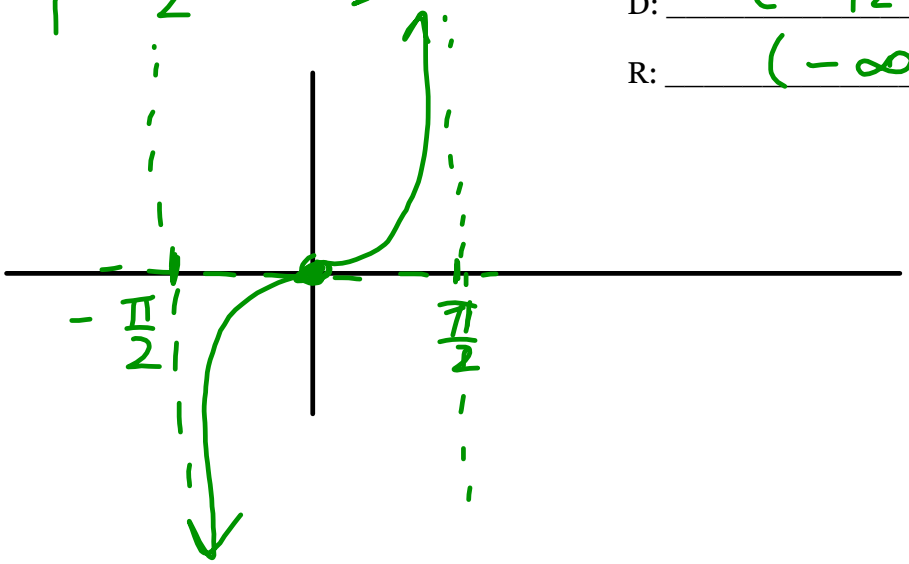
$\frac{\pi}{1} \cdot -\frac{1}{2} = -\frac{\pi}{2}$

A: DNE VS: $\emptyset$

P: $\pi$ HS: $\emptyset$

D: $(-\pi/2, \pi/2)$

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

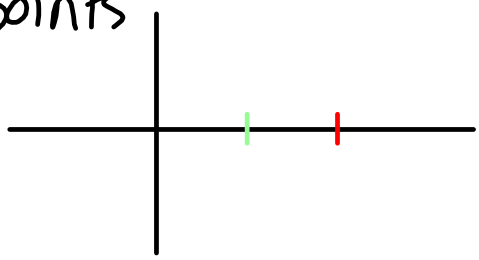


## Steps for Cotangent graph:

1. Find the period by using $\frac{\pi}{B}$ .

0 & period are key points

2. Multiply the period by $\frac{1}{2}$.

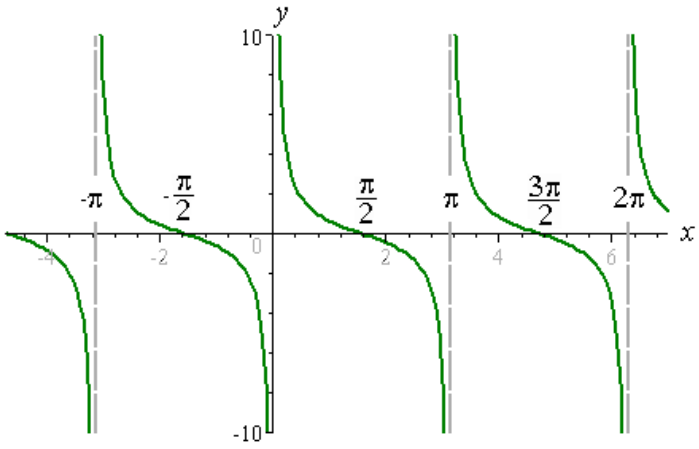


3. Perform any horizontal shifts.

4. Draw the vertical asymptotes.

5. Perform any vertical shifts.

## Cotangent



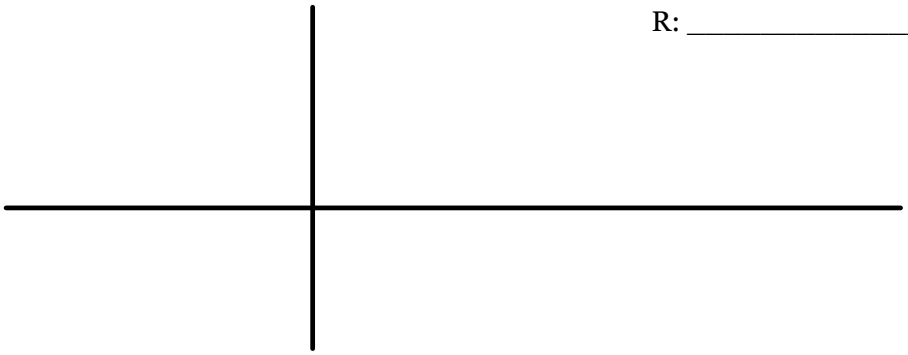
**2.)** $y = \cot x$

A:_____ VS:_____

P:_____ HS:_____

D:_____

R:_____



Find the important information for **one period** of the equation, then graph.

**3.)** $y = 3\tan 4(x - \frac{\pi}{2}) + 1$

$\frac{\pi}{4} \cdot \frac{1}{2} = \frac{\pi}{8} + \frac{\pi}{2} = \frac{5\pi}{8}$

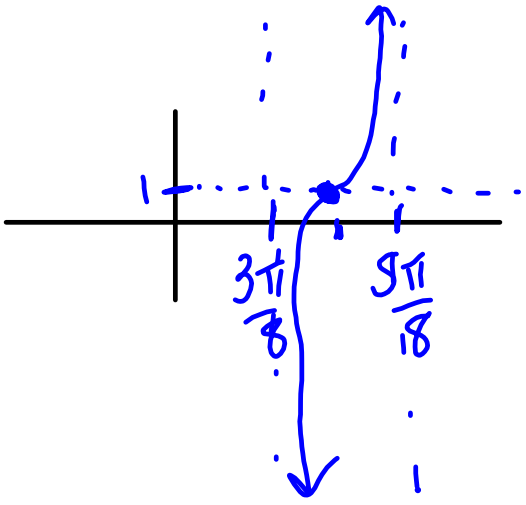
$\frac{\pi}{4} \cdot -\frac{1}{2} = -\frac{\pi}{8} + \frac{\pi}{2} = \frac{3\pi}{8}$

A: DNE VS: U 1

P: $\pi/4$ HS: R $\pi/2$

D: $(3\pi/8, 5\pi/8)$

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



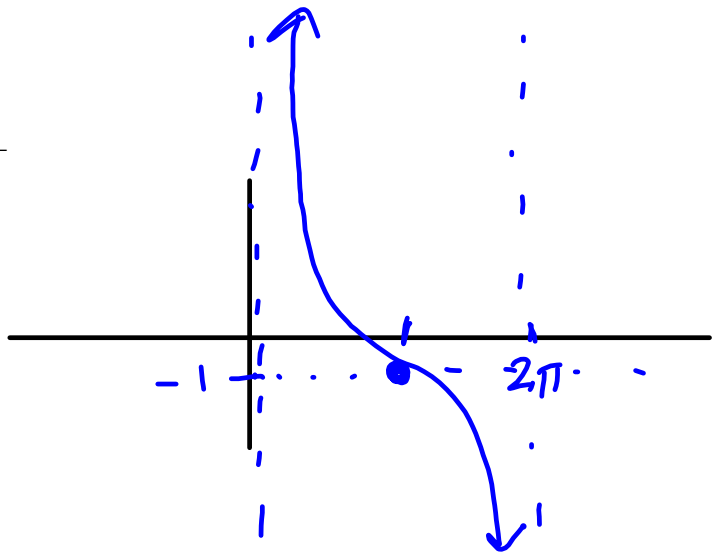
**4.)** $y = 2\cot\frac{1}{2}x - 1$

A: DNE VS: $\alpha$ 1

P: $2\pi$ HS: $\emptyset$

D: $(0, 2\pi)$

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



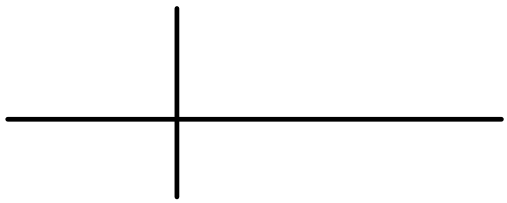

**5.)** $y = \cot\left(x + \frac{\pi}{2}\right)$

A:_____ VS:_____

P:_____ HS:_____

D:_____

R:_____



**6.)** $y = \tan\left(4x - \pi\right) - 2$

A:_____ VS:_____

P: _____ HS:_____

D: _____

R: _____