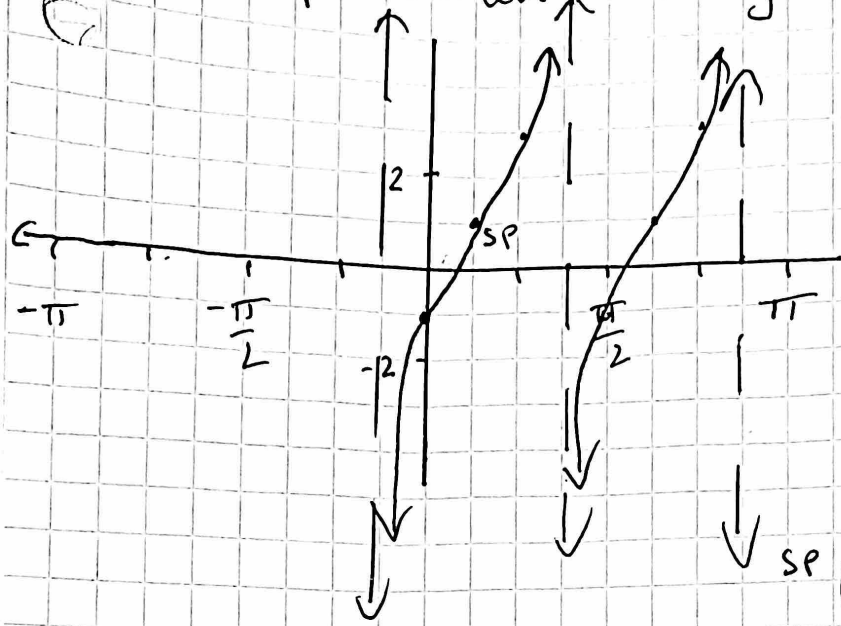


1/9/2020 Warm Up

Graph at least 2 cycles of $y = 2 \tan(2x - \frac{\pi}{4}) + 1$



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

$$2x = \frac{3\pi}{4}$$

$$x = \frac{3\pi}{8}$$

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

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

$$x = -\frac{\pi}{8}$$

$$\text{per} = \frac{\pi}{2}$$

$$\text{SP} \left(\frac{\pi}{8}, 1 \right)$$

4.5 day 2 ex 4

Goal: Be able to graph any secant or cosecant graph (1)

$$y = a \sec(bx + c) + d$$

$$y = a \csc(bx + c) + d$$

How:

(1) Find the period

(2) Find the CPS

(3) Find the midline

(4) Find the phase shift

(5) plot the midline

(6) plot the SP

(7) Plot the CPS

(8) Any point on

the midline becomes an asymptote

(*) $\csc \theta$ SP is an asymptote

$$x = \text{SP of sine}$$

(9) all the max + min become away from the midline

4.5 day 2 ex 4

Goal: Be able to graph any secant or cosecant graph. 😊

$$y = a \sec(bx + c) + d$$

$$y = a \csc(bx + c) + d$$

How:

- ① Find the period
- ② Find the CPS
- ③ Find the midline
- ④ Find the phase shift

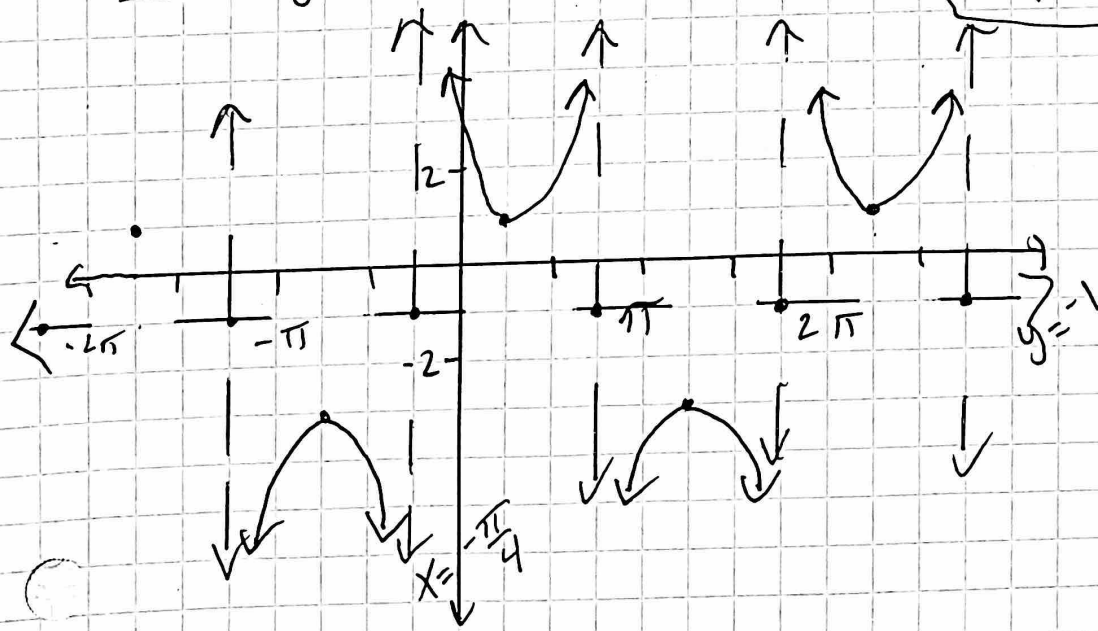
- ⑤ plot the midline
- ⑥ Plot the SP
- ⑦ Plot the critical points
- ⑧ Any point on the midline becomes an asymptote.

* $\csc \theta$ SP is an asymptote

$$x = -\frac{c}{b}$$

⑨ all the max + min become \curvearrowright away from the midline

ex) $y = 2 \csc(x + \frac{\pi}{4}) - 1$



per: 2π

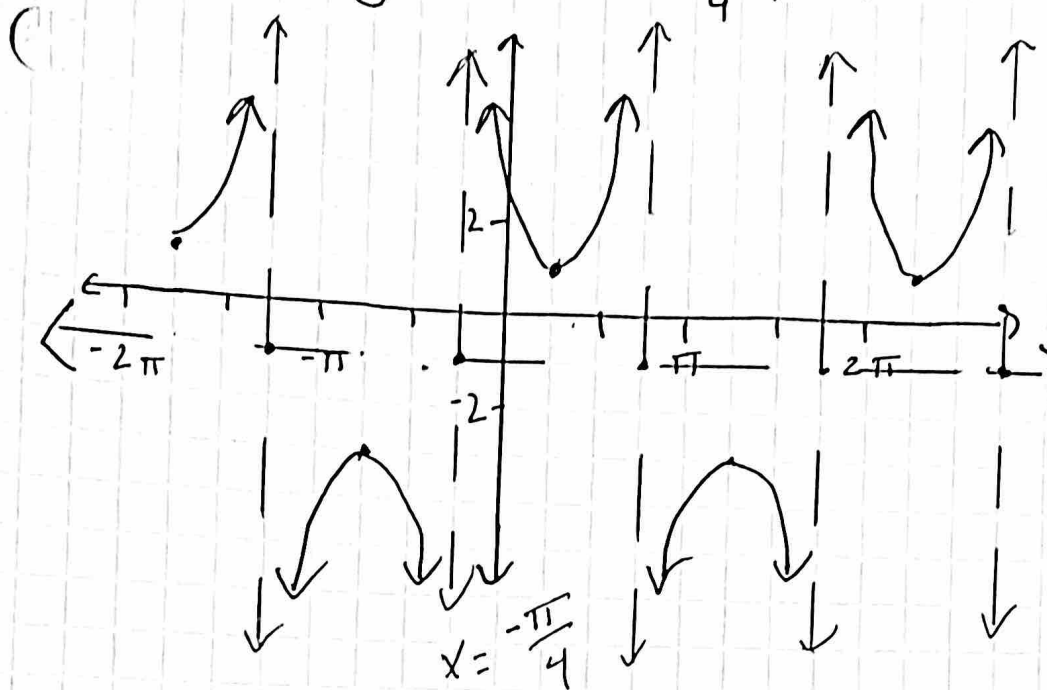
CPS: $\frac{2\pi}{4} = \frac{\pi}{2}$

midline $y = -1$

P.S. $\frac{-\pi/4}{1} = -\frac{\pi}{4}$

left + $\frac{\pi}{4}$

ex 1 $y = 2 \csc(x + \frac{\pi}{4}) - 1$



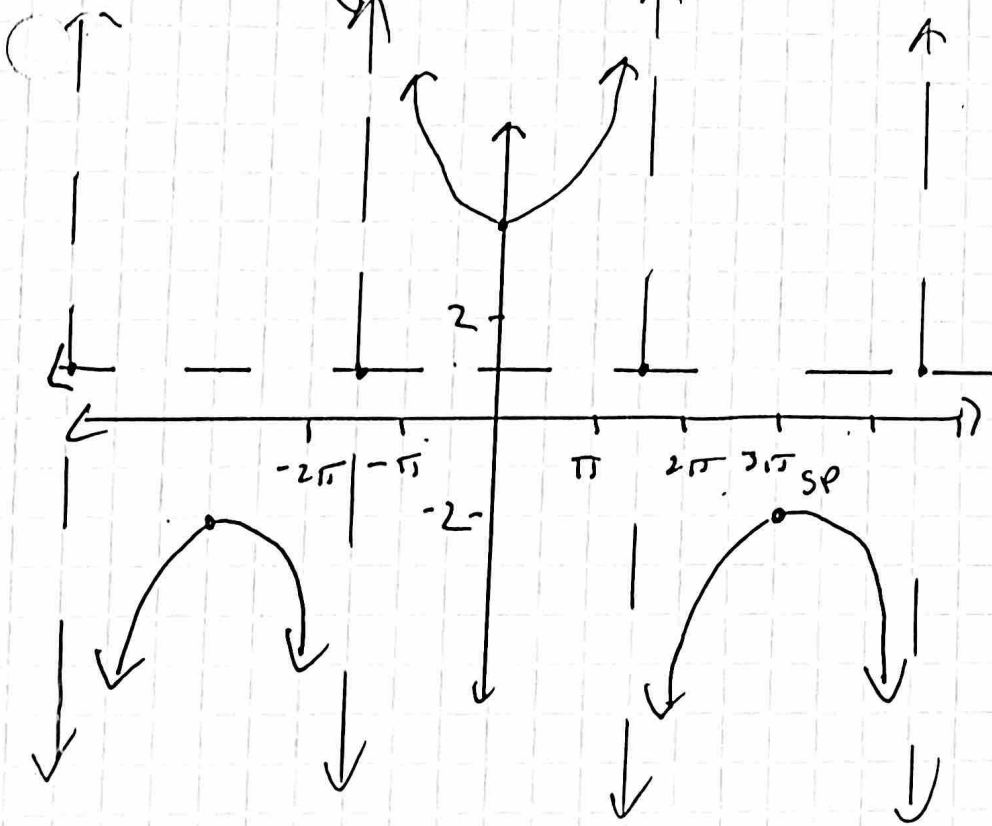
per: 2π

CPS: $\frac{2\pi}{4} = \frac{\pi}{2}$

SA: $y = -1$

PS: $\frac{-\pi}{4} = \frac{-\pi}{4}$
left $\frac{\pi}{4}$

ex 2 $y = -3 \sec(\frac{1}{3}x - \pi) + 1$



per = $\frac{2\pi}{\frac{1}{3}} = 6\pi$

CPS = $\frac{6\pi}{4} = \frac{3\pi}{2}$

SA $y = 1$

PS $\frac{-(-\pi)}{\frac{1}{3}} = 3\pi$

right 3π

SP $(3\pi, -2)$