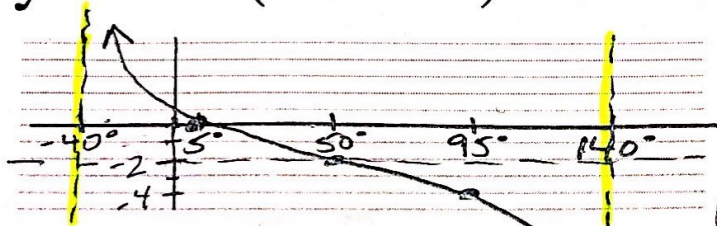


Warm-up 4:

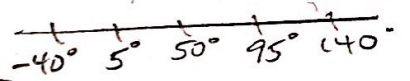
Graph the following functions. State the period, domain and range.

1. $y = 2\cot(\theta + 40^\circ) - 2$



- Amp 2
- VS -2
- pos cot

$$\begin{aligned} \theta + 40^\circ = 0^\circ & \quad \theta + 40^\circ = 180^\circ \\ \theta = -40^\circ & \quad \theta = 140^\circ \end{aligned}$$

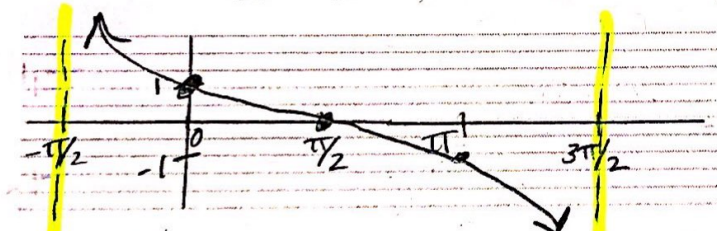


D: $(-40, 140)$

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

Period: $140 - (-40) = 180$

2. $y = -\tan\left(\frac{x}{2} - \frac{\pi}{4}\right)$



- amp 1
- VS None
- neg tan

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

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

Period: $\frac{3\pi}{2} - (-\frac{\pi}{2}) = \frac{4\pi}{2} = 2\pi$

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

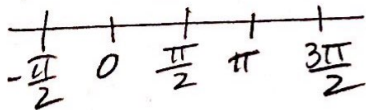
$$\frac{x}{2} = -\frac{2\pi}{4} + \frac{\pi}{4} \quad \frac{x}{2} = \frac{2\pi}{4} + \frac{\pi}{4}$$

$$(2) \frac{x}{2} = -\frac{\pi}{4} \quad (2)$$

$$(2) \frac{x}{2} = \frac{3\pi}{4} \quad (2)$$

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

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



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

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

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