

Name: key Date: _____

Review Worksheet 2: Graphs of Trig Functions

Fill in the blanks to complete the table and then graph.

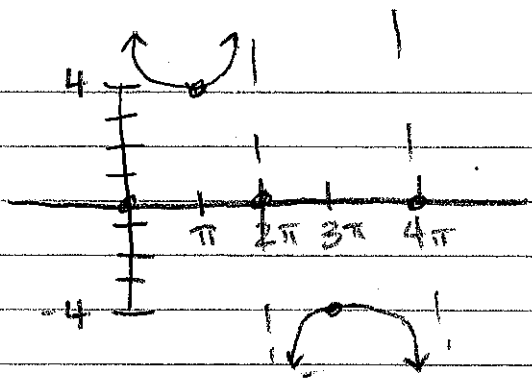
	Equation	Function	Reciprocal Function	Vertical Stretch/Shrink	Phase Shift	Domain	Period	Vertical Displacement	Range
1.	$y = 4 \csc \frac{x}{2}$	csc	SIN	4	0	$(0, 2\pi) \cup (2\pi, 4\pi)$	4π	0 or NA	$(-\infty, -4] \cup [4, \infty)$
2.	$y = \frac{2 \csc(x + \frac{\pi}{8})}{5} + 5$	csc x	SIN	2	$-\frac{\pi}{8}$	$(-\frac{\pi}{8}, 7\frac{\pi}{8}) \cup (7\frac{\pi}{8}, 15\frac{\pi}{8})$	2π	5	$(-\infty, 3] \cup [7, \infty)$
3.	$y = -\frac{1}{4} \sec(\frac{x}{2}) - 2$	sec	COS	$\frac{1}{4}$	π	$(\pi, 3\pi/2) \cup (3\pi/2, 5\pi/2) \cup (5\pi/2, 3\pi)$	2π	-2	$(-\infty, -2] \cup [-13/4, \infty)$
4.	$y = \frac{1}{2} \tan(2\theta) + 3$	tan	NA (cot)	$\frac{1}{2}$	-45°	$(-45^\circ, 45^\circ)$	90°	3	$(-\infty, \infty)$
5.	$y = \frac{3 \sec(3x - \frac{\pi}{2})}{3}$	sec x	COS	3	$\frac{\pi}{6}$	$(\frac{\pi}{6}, \frac{\pi}{3}) \cup (\frac{\pi}{3}, 2\frac{\pi}{3}) \cup (2\frac{\pi}{3}, 5\frac{\pi}{6})$	$\frac{2\pi}{3}$	0 or NA	$(-\infty, -3] \cup [3, \infty)$
6.	$y = 2 \cot(\frac{\theta}{2} - 60^\circ)$	cot	NA (tan)	2	120°	$(120^\circ, 480^\circ)$	360°	0 or NA	$(-\infty, \infty)$

$\tan \rightarrow -90, 90$
 $\cot \rightarrow 0, 180$

① $\frac{x}{2} = 0$ $2 \frac{x}{2} = 2\pi \cdot 2$

$y = 4 \csc \frac{x}{2}$

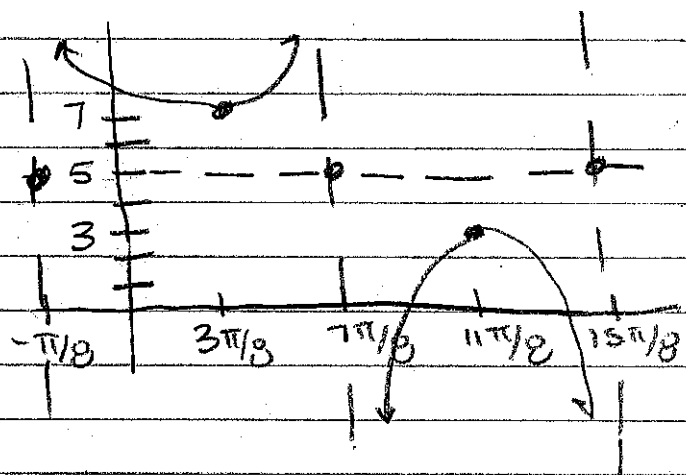
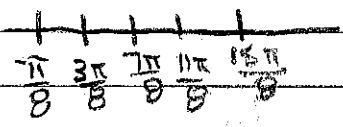
$x = 0$ $x = 4\pi$



② $x + \frac{\pi}{8} = 0$ $x + \frac{\pi}{8} = 2\pi$

$y = 2 \csc(x + \frac{\pi}{8}) + 5$

$x = -\frac{\pi}{8}$ $x = \frac{15\pi}{8}$

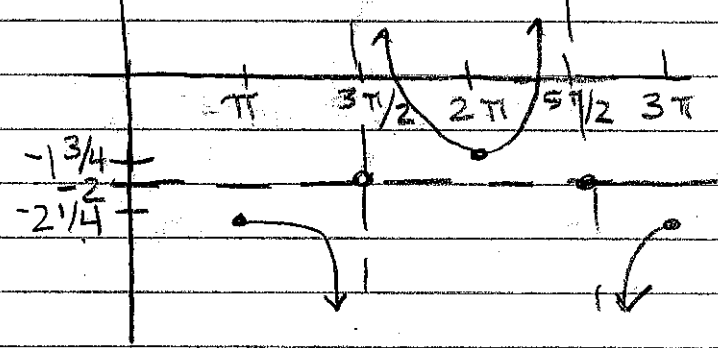


me:

③ $x - \pi = 0$ $x - \pi = 2\pi$
 $x = \pi$ $x = 3\pi$

$y = -\frac{1}{4} \sec(x - \pi) - 2$

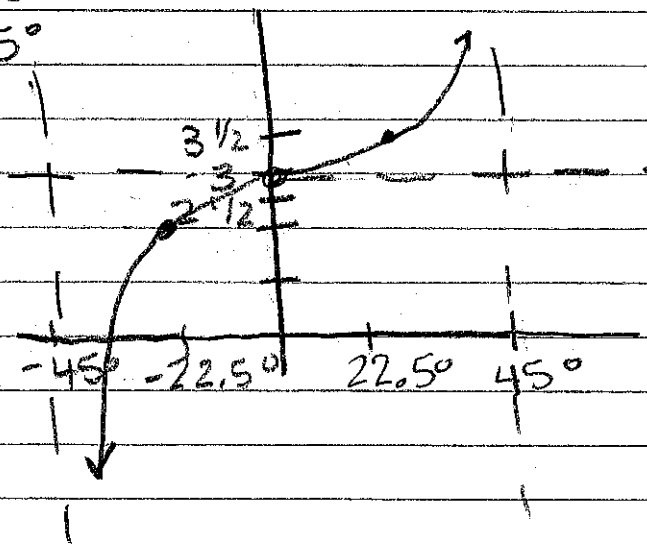
* reflects x-axis!



④ $2\theta = -90$ $2\theta = 90$
 $\theta = -45^\circ$ $\theta = 45^\circ$

$y = \frac{1}{2} \tan 2\theta + 3$

$45^\circ - -45^\circ = 90^\circ$



$$5. \quad 3x - \frac{\pi}{2} = 0$$

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

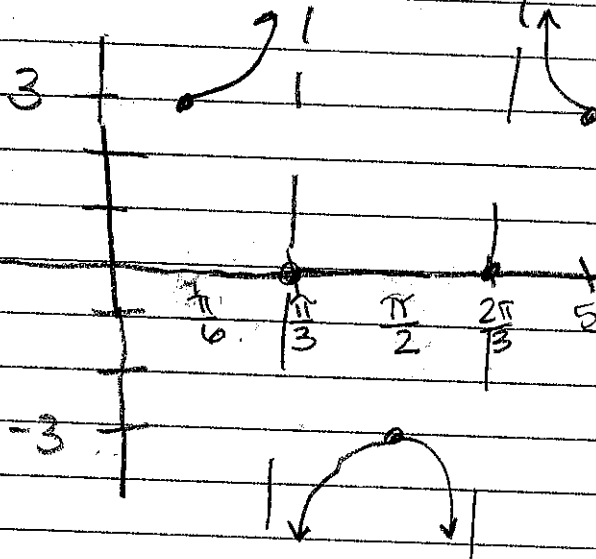
$$\frac{1}{3} \cdot 3x = \frac{\pi}{2} \cdot \frac{1}{3}$$

$$\frac{1}{3} \cdot 3x = \frac{5\pi}{2} \cdot \frac{1}{3}$$

$$x = \frac{\pi}{6}$$

$$x = \frac{5\pi}{6}$$

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



$$\frac{5\pi}{6} - \frac{\pi}{6} = \frac{4\pi}{6} = \frac{2\pi}{3}$$

$$6. \quad \frac{\theta}{2} - 60 = 0$$

$$\frac{\theta}{2} - 60 = 180$$

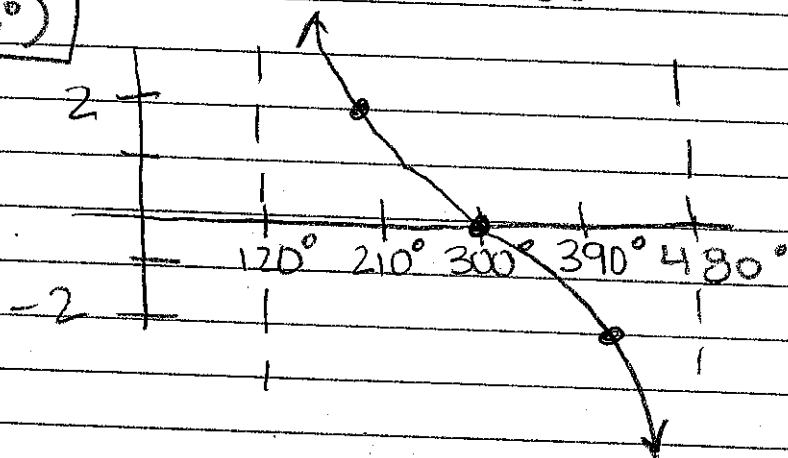
$$\frac{\theta}{2} = 60$$

$$\theta = 120^\circ$$

$$\frac{\theta}{2} = 240$$

$$\theta = 480^\circ$$

$$y = 2\cot\left(\frac{\theta}{2} - 60^\circ\right)$$



$$480 - 120 = 360^\circ$$