

p. 26

2.13 Review

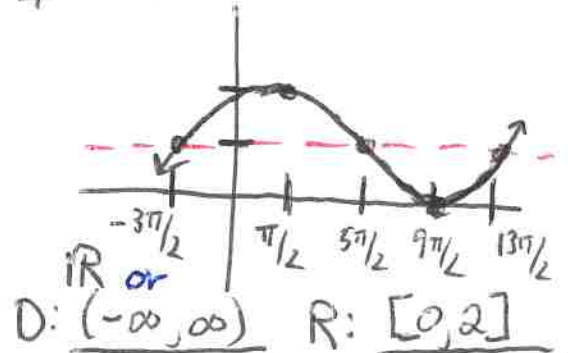
$$1) y = \sin\left(\frac{\theta}{4} + \frac{3\pi}{8}\right) + 1 \rightarrow \sin\left[\frac{1}{4}\left(\theta + \frac{4 \cdot 3\pi}{8}\right)\right]$$

$$y = \sin\left[\frac{1}{4}\left(\theta + \frac{3\pi}{2}\right)\right] \quad a=1 \quad c = \frac{3\pi}{2} \text{ (left)}$$

$$b = 1/4 \quad d = 1$$

$$P = \frac{2\pi}{b} \rightarrow \frac{2\pi}{1/4} \rightarrow 2\pi \cdot \frac{4}{1} = 8\pi \quad I = \frac{P}{4} \rightarrow \frac{8\pi}{4} = 2\pi$$

θ	$0 - \frac{3\pi}{2}$	$2\pi - \frac{3\pi}{2}$	$4\pi - \frac{3\pi}{2}$	$6\pi - \frac{3\pi}{2}$	$8\pi - \frac{3\pi}{2}$
$\sin \theta$	0	1	0	-1	0
$d=1$	1	2	1	0	1



$$2) y = -4 \sec(\theta - \pi) - 2 \quad | \quad y = -4 \sec\left[1(\theta - \pi)\right] - 2$$

* think cosine

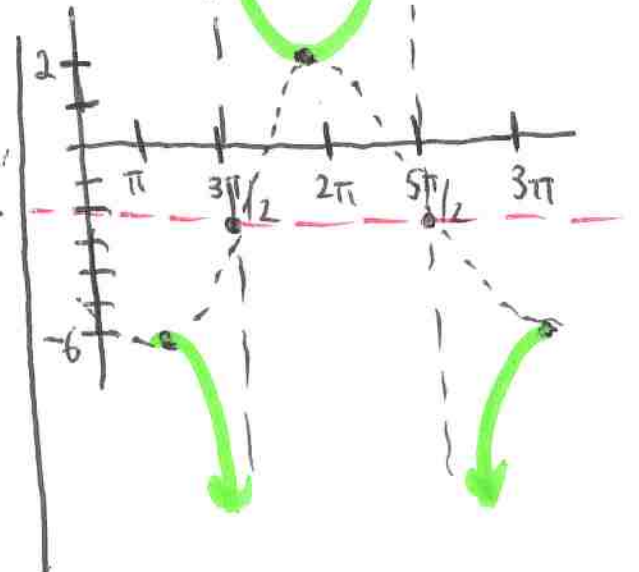
$$P = \frac{2\pi}{b} \rightarrow \frac{2\pi}{1} = 2\pi \quad I = \frac{P}{4} = \frac{2\pi}{4} \rightarrow \frac{\pi}{2}$$

$$a = -4 \quad c = \pi \text{ (right)}$$

$$b = 1$$

$$d = -2$$

θ	$0 + \pi$	$\frac{3\pi}{2} + \pi$	$2\pi + \pi$	$\frac{5\pi}{2} + \pi$	$3\pi + \pi$
$\cos \theta$	1	0	-1	0	1
$-4 \cos \theta$	-4	0	4	0	-4
$d = -2$	-6	-2	2	-2	-6



$$D: \mathbb{R} \text{ except } x = \frac{3\pi}{2} + \pi n \quad n \in \mathbb{Z}$$

$$R: (-\infty, -6], [2, \infty)$$

2.13 Review

3) $y = 5 \tan\left(\frac{\theta}{2} + \frac{\pi}{2}\right) + 3$

$y = 5 \tan\left[\frac{1}{2}(\theta + \pi)\right] + 3$

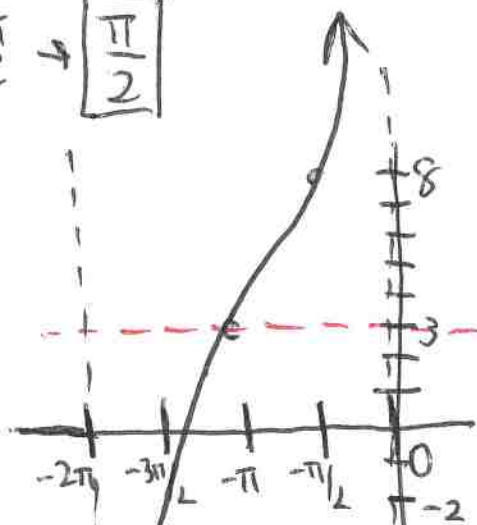
$y = 5 \tan\left[\frac{1}{2}\left(\theta + \frac{2 \cdot \pi}{2}\right)\right] + 3$

$a = 5$ $c = \pi$ (left)
 $b = 1/2$ $d = 3$

$P = \frac{\pi}{b} \rightarrow \frac{\pi}{1/2} \rightarrow \pi \cdot 2 = 2\pi$

$I = \frac{P}{4} \rightarrow \frac{2\pi}{4} \rightarrow \frac{\pi}{2}$

θ	$-\pi - \pi$	$-\frac{3\pi}{2} - \pi$	$0 - \pi$	$\frac{\pi}{2} - \pi$	$\pi - \pi$
$\tan \theta$	VA	-1	0	1	VA
$5 \tan \theta$	VA	-5	0	5	VA
$d = 3$	VA	-2	3	8	VA



D: \mathbb{R} except

$x = -2\pi + 2\pi n$

$n \in \mathbb{Z}$

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

4) $y = 0.5 \cot(2\theta + \pi) - 1$

4) $y = 0.5 \cot\left[2\left(\theta + \frac{\pi}{2}\right)\right] - 1$

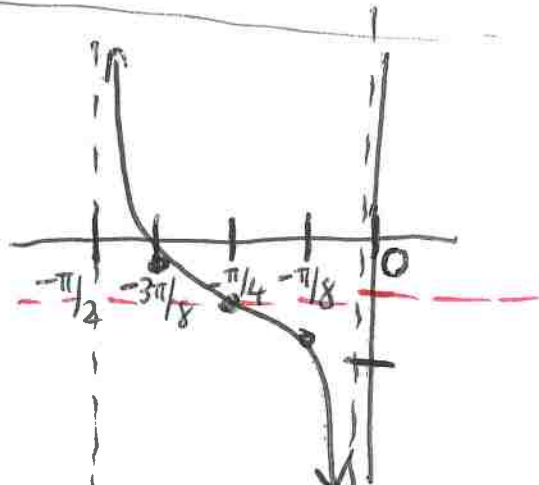
$P = \frac{\pi}{b} \rightarrow \frac{\pi}{2}$ $I = \frac{P}{4} \rightarrow \frac{\pi/2}{4}$

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

$y = 0.5 \cot\left[2\left(\theta + \frac{\pi}{2}\right)\right] - 1$

$a = 0.5$ $c = \pi/2$ (left) $\rightarrow (-\frac{4\pi}{8})$
 $b = 2$ $d = -1$

θ	$0 - \frac{\pi}{2}$	$\frac{\pi}{8} - \frac{4\pi}{8}$	$\frac{2\pi}{8} - \frac{4\pi}{8}$	$\frac{3\pi}{8} - \frac{4\pi}{8}$	$\frac{4\pi}{8} - \frac{4\pi}{8}$
$\cot \theta$	VA	+1	0	-1	VA
$0.5 \cot \theta$	VA	1/2	0	-1/2	VA
$d = -1$	VA	-0.5	-1	-1.5	VA



D: \mathbb{R} except $x = -\frac{\pi}{2} + \frac{\pi}{2}n, n \in \mathbb{Z}$

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