

Pre-Cal. Review

	Cosine	Sine	
0	A	0	(0, 1)
$\frac{\pi}{4}$	0	A	(1, 0)
$\frac{\pi}{2}$	-A	0	(0, -1)
$\frac{3\pi}{4}$	0	-A	
π	A	0	

$\frac{\pi}{4}$
(0, 1)

$\frac{\pi}{2}$
(1, 0)

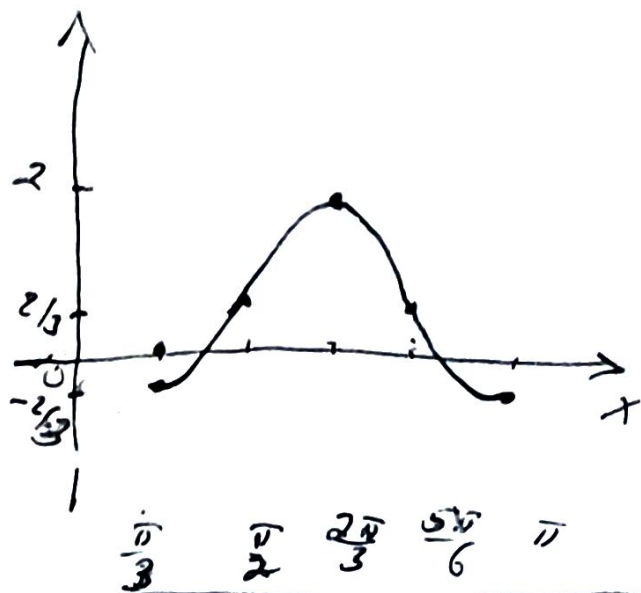
$\frac{3\pi}{4}$
(0, -1)

Ex. 13. $|A|, P, \phi$, VT & table & sketch.

Ex. 14 $y = \frac{2}{3} - \frac{4}{3} \cos(3x - \pi)$

$|A| = \frac{4}{3}$ $P = \frac{2\pi}{3}$ $\phi = \frac{\pi}{3}$ VT: $y = \frac{2}{3}$

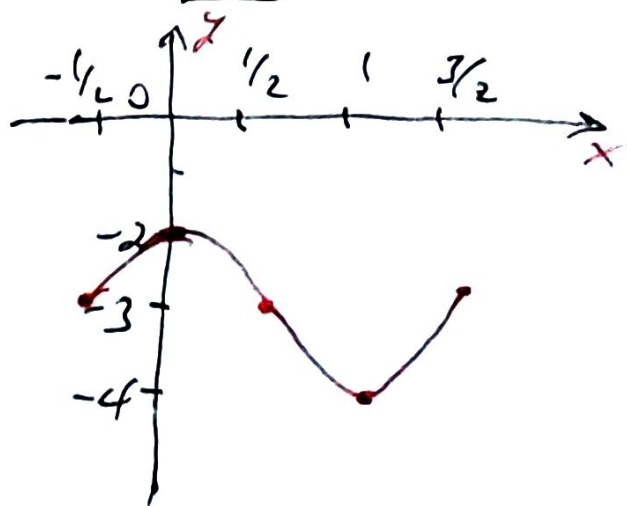
	X	y
$0 + \frac{\pi}{3}$	$\frac{\pi}{3}$	$-\frac{4}{3} + \frac{2}{3} = -\frac{2}{3}$
$\frac{\pi}{6} + \frac{\pi}{3}$	$\frac{\pi}{2}$	$\frac{2}{3}$
$\frac{\pi}{3}$	$\frac{2\pi}{3}$	$\frac{4}{3} + \frac{2}{3} = 2$
$\frac{\pi}{2}$	$\frac{5\pi}{6}$	$\frac{2}{3}$
$\frac{2\pi}{3}$	π	$-\frac{4}{3} + \frac{2}{3} = -\frac{2}{3}$



Ex. 13 $y = -3 + \sin(\pi x - \frac{\pi}{2})$

$|A| = 1$ $P = \frac{2\pi}{\pi} = 2$ $\phi = -\frac{\pi}{2}$ VT: $y = -3$
 $= -\frac{1}{2}$

	X	y	y
$0 - \frac{1}{2}$	$\frac{1}{2}$	$0 - 3$	-3
$\frac{1}{4} - \frac{1}{2}$	0	$1 - 3$	-2
$\frac{1}{2} - \frac{1}{2}$	$\frac{1}{2}$	$0 - 3$	-3
$\frac{3}{4} - \frac{1}{2}$	1	$-1 - 3$	-4
$\pi - \frac{1}{2}$	$\frac{3}{2}$	$0 - 3$	-3



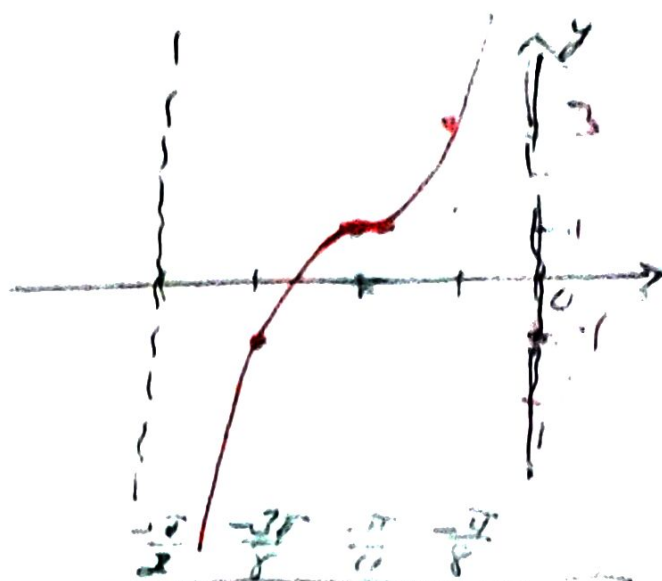
7.2. # 1

$$y = 1 - 2 \cot^2 \left(x + \frac{\pi}{2} \right)$$

$$1 - 2 \cot^2 (2x + \pi)$$

$$|A| = a/a \quad P = \frac{\pi}{2} \quad \phi = -\frac{\pi}{2} \quad VT: y = 1$$

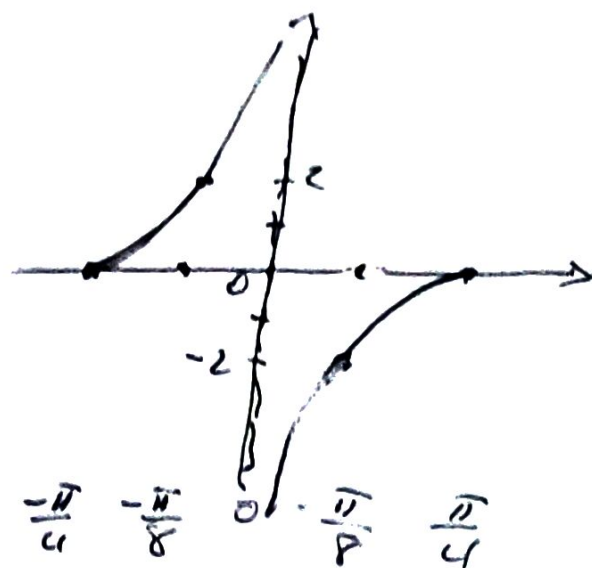
		x	y
0	$-\frac{\pi}{2}$	$-\frac{\pi}{2}$	∞
$\frac{\pi}{8}$	$-\frac{\pi}{2}$	$-\frac{3\pi}{8}$	$2+1=-1$
$\frac{\pi}{4}$	$-\frac{\pi}{2}$	$-\frac{\pi}{4}$	$0+1=1$
$\frac{3\pi}{8}$	$-\frac{\pi}{2}$	$-\frac{\pi}{8}$	$2+1=3$
$\frac{\pi}{2}$	$-\frac{\pi}{2}$	0	∞



2 $y = 2 \tan \left(2x + \frac{\pi}{2} \right)$

$$|A| = a/a \quad P = \frac{\pi}{2} \quad \phi = -\frac{\pi}{4} \quad VT: y = 0$$

		x	y
0	$-\frac{\pi}{4}$	$-\frac{\pi}{4}$	0
$\frac{\pi}{8}$	$-\frac{\pi}{4}$	$-\frac{\pi}{8}$	2
$\frac{\pi}{4}$	$-\frac{\pi}{4}$	0	∞
$\frac{3\pi}{8}$	$-\frac{\pi}{4}$	$\frac{\pi}{8}$	-2
$\frac{\pi}{2}$	$-\frac{\pi}{4}$	$\frac{\pi}{4}$	0

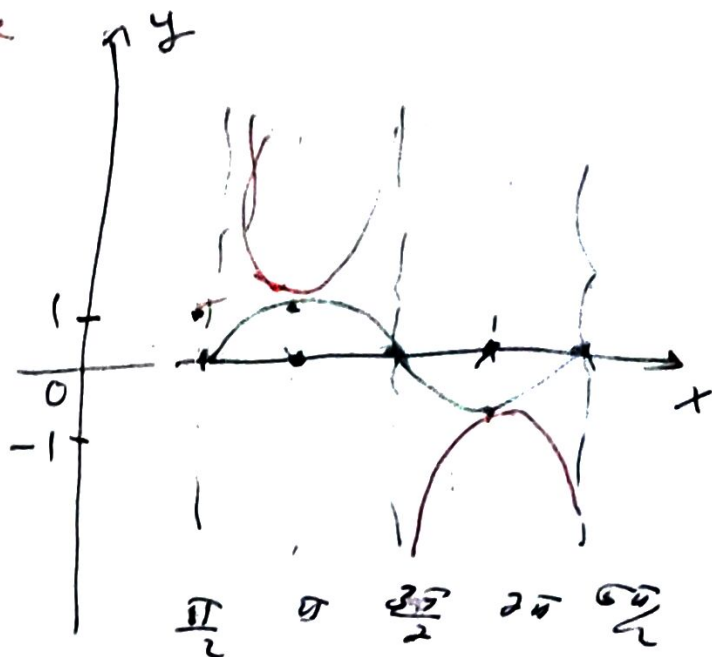


1.2 # 1

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

$$|A| = \text{none} \quad P = 2\pi \quad \phi = \frac{\pi}{2} \quad \text{VT: } y = 0$$

	X	y = <i>Sine</i>
0 + $\frac{\pi}{2}$	$\frac{\pi}{2}$	0
$\frac{\pi}{2} + \frac{\pi}{2}$	π	1
π	$\frac{3\pi}{2}$	0
$\frac{3\pi}{2}$	2π	-1
2π	$\frac{5\pi}{2}$	0

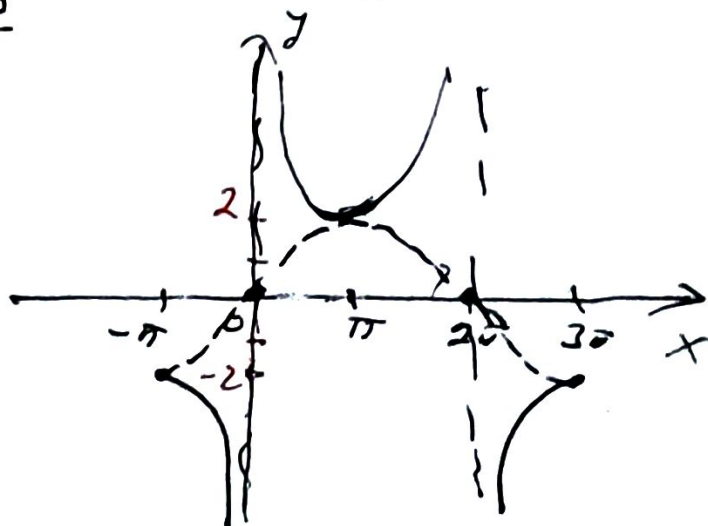


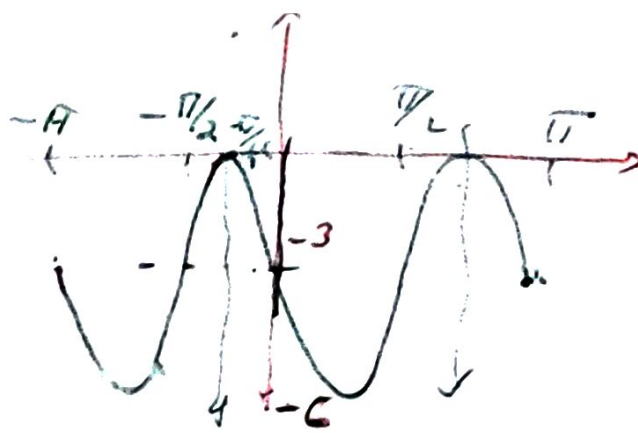
$y = -2 \sec\left(\frac{1}{2}x + \frac{\pi}{2}\right)$

$$|A| = 2/a \quad P = \frac{2\pi}{\frac{1}{2}} = 4\pi \quad \phi = -\pi \quad \text{VT: } y = 0$$

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

	X	y = -2 cos
0 - π	$-\pi$	-2
$\pi - \pi$	0	0
2π	π	+2
3π	2π	0
4π	3π	-2





$$\phi = 0 \Rightarrow C = 0$$

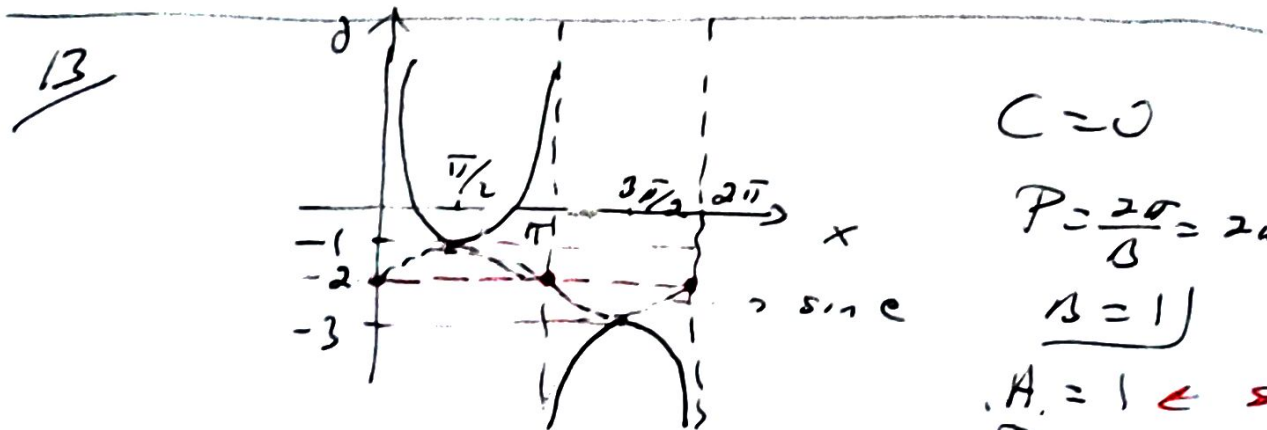
$$A = 3$$

$$P = \frac{2\pi}{B} = \pi \Rightarrow \underline{B = 2}$$

$$\text{VT: } D = -3$$

$$y = -3 \sin(2x) - 3$$

$$-\pi \leq x \leq \pi$$



$$C = 0$$

$$P = \frac{2\pi}{B} = 2\pi$$

$$\underline{B = 1}$$

$$A = 1 \leftarrow \text{since}$$

$$D = -2$$

$$y = \frac{\cos x - 2}{0 \leq x \leq 2\pi}$$

7.1 #131

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

$$|A| = 1 \quad P = \frac{2\pi}{\pi} = 2 \quad \phi = -\frac{\pi}{2} \cdot \frac{1}{\pi} = -\frac{1}{2}$$

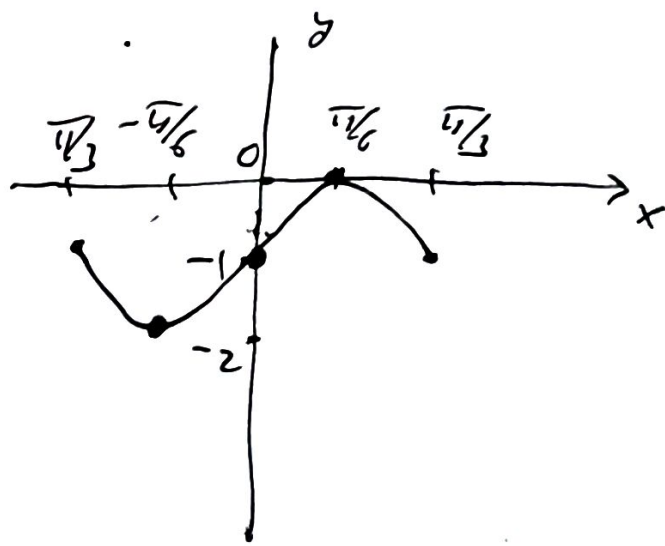
$$VT: y = -3$$

	X
0	$-\frac{1}{2}$
$\frac{1}{2}$	$-\frac{1}{2}$
1	
$\frac{3}{2}$	
2	

#17 $y = -\sin(3x + \pi) - 1$

$$|A| = 1 \quad P = \frac{2\pi}{3} \quad \phi = -\frac{\pi}{3} \quad VT: y = -1$$

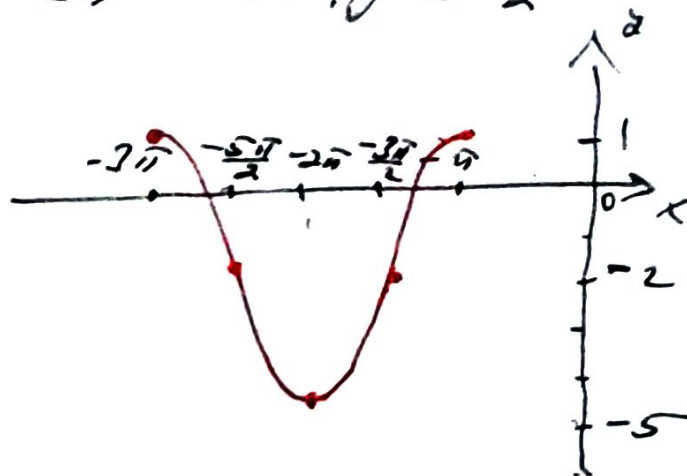
	X	Y
0	$-\frac{\pi}{3}$	$0 - 1 = -1$
$\frac{\pi}{6}$	$-\frac{\pi}{6}$	$-1 - 1 = -2$
$\frac{\pi}{3}$	0	$0 - 1 = -1$
$\frac{\pi}{2}$	$\frac{\pi}{6}$	$1 - 1 = 0$
$\frac{2\pi}{3}$	$\frac{\pi}{3}$	$0 - 1 = -1$



#26 - $y = 3 \cos(x + 3\pi) - 2$

$|A| = 3$ $P = 2\pi$ $\phi = -3\pi$ $\text{VT: } y = -2$

		x	y	
0	-3π	-3π	$3-2$	1
$\frac{\pi}{2}$	-3π	$-\frac{5\pi}{2}$	$0-2$	-2
π		-2π	$-3-2$	-5
$\frac{3\pi}{2}$		$-\frac{3\pi}{2}$	$0-2$	-2
2π		$-\pi$	$3-2$	1



Cosecant \rightarrow Sine

Secant \rightarrow Cosine

$y = 5 \csc(3x - \frac{\pi}{2})$

$|A| = \text{none}$ $P = \frac{2\pi}{3}$ $\phi = \frac{\pi}{6}$ $\text{VT: } y = 0$

	x	y = 5 sine
$0 + \frac{\pi}{6}$	$\frac{\pi}{6}$	0
$\frac{\pi}{6} + \frac{\pi}{6}$	$\frac{\pi}{3}$	5
$\frac{\pi}{3}$	$\frac{\pi}{2}$	0
$\frac{\pi}{2}$	$\frac{2\pi}{3}$	-5
$\frac{2\pi}{3}$	$\frac{5\pi}{6}$	0

