

# Pre Calculus - Chapter 4 Review

Name Key / 2021 Date \_\_\_\_\_ Per \_\_\_\_\_

Find the exact value of:

- 1)  $\tan \frac{11\pi}{6}$  2)  $\sec(-\frac{5\pi}{3})$  3)  $\csc \frac{5\pi}{4}$  4)  $\cos 0$  5)  $\sin(-\frac{3\pi}{2})$  6)  $\cot(-\frac{2\pi}{3})$

Find the length of an arc of a circle with the given radius and central angle:

- 7)  $r = 7$  in  $\theta = 60^\circ$   $\theta^R = \frac{\pi}{3}$   $S = r\theta^R$   
 8)  $r = 25$  cm  $\theta = 200^\circ$   $\theta^R = \frac{10\pi}{9}$

Point P moves counterclockwise on a circle with radius  $r$ , and center at the origin. If P starts at  $(r, 0)$  find the coordinates of its final position.

9)  $s = 5\pi$   
 $\theta^R = \frac{4\pi}{3}$   
 $r = \frac{15}{4}$

10)  $s = \frac{9\pi}{4}$   
 $\theta^R = 3\pi$   
 $r = \frac{3}{4}$

$x = r \cos \theta$   
 $y = r \sin \theta$   
 $\theta^R = \frac{s}{r}$

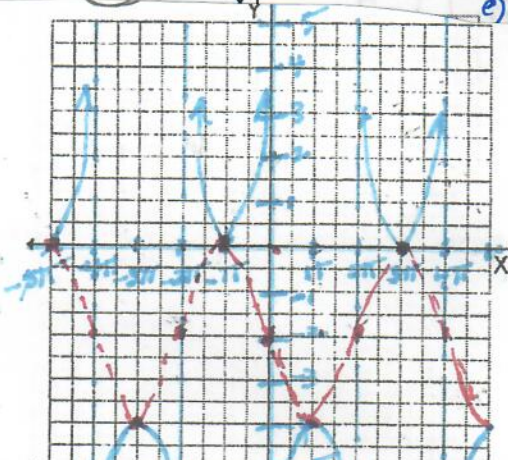
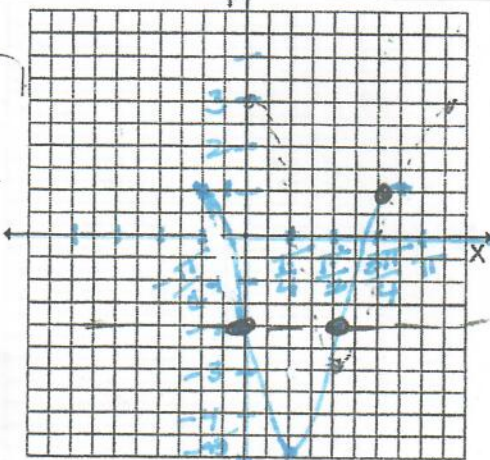
Graph the following functions: In problems 11 and 13 also find:

a) amplitude, b) value of b, c) period, d) phase shift, and e) vertical shift.

11)  $y = 3 \cos\left(2\theta + \frac{\pi}{2}\right) - 2$

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

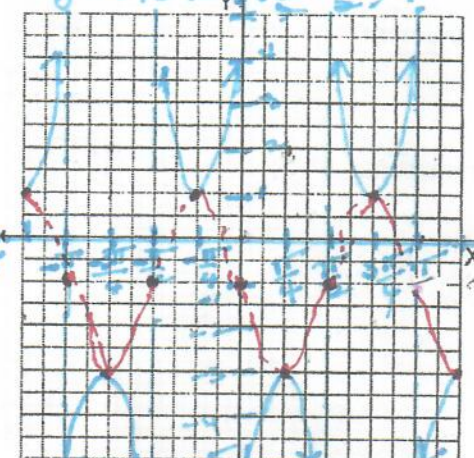
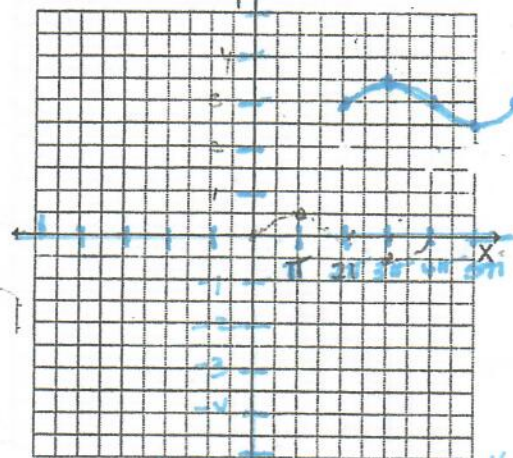
- a)  $\frac{2}{4\pi}$   
 b)  $4\pi$   
 c)  $-\pi$   
 d)  $-2$



13)  $y = \frac{1}{2} \sin\left(\frac{\theta}{2} - \pi\right) + 3$

14)  $y = 2 \csc(2\theta - \pi) - 1$

$y = 2 \csc(2(\theta - \frac{\pi}{2})) - 1$



$y = \frac{1}{2} \sin \frac{1}{2}(\theta - 2\pi) + 3$   $a = \frac{1}{2}$   $Per = 4\pi$   
 $PS = -\pi$   $VS = 3$

Assg#

1)	$-\frac{\sqrt{3}}{3}$
2)	2
3)	$-\sqrt{2}$
4)	1
5)	1
6)	$\frac{\sqrt{3}}{3}$
7)	$\frac{7\pi}{3}$
8)	$\frac{250\pi}{9}$
9)	$(-\frac{15}{8}, \frac{15\sqrt{3}}{8})$
10)	$(-\frac{3}{4}, 0)$
11)a)	3 = amp.
b)	$b = 2$
c)	$\pi = Per.$
d)	$PS = -\frac{\pi}{4}$
e)	$VS = -2$
13)a)	amp = $\frac{1}{2}$
b)	$b = \frac{1}{2}$
c)	$Per = 4\pi$
d)	$PS = \pi$
e)	$VS = 3$
16)	$y = 2 \sin(8x - 8\pi) - 3$
17)	$y = 4 \cos(x + \frac{\pi}{2}) + \frac{1}{2}$
18)	$\theta = \frac{\pi}{3}$
19)	$\frac{\sqrt{3}}{2}$
20)	0
21)	$\theta = 0, \pi, 2\pi$
22)	$\theta = \frac{\pi}{2}, \frac{5\pi}{2}$
23)	$-75^\circ$
24)	$\frac{59\pi}{90}$