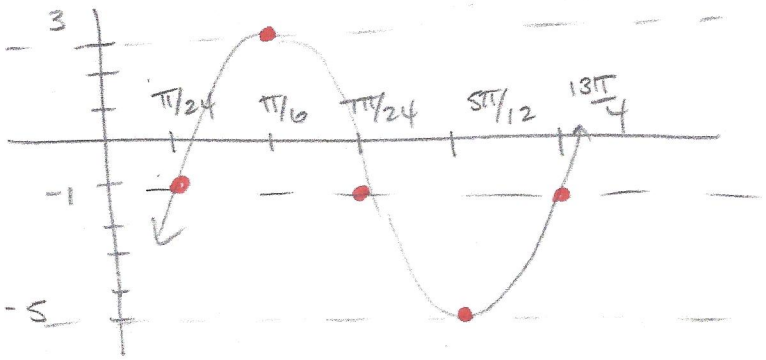
11. $y = 4\sin\left(4\theta - \frac{\pi}{6}\right) - 1$

$A = 4$

$\text{Per} = \frac{\pi}{2}$

$PS = \frac{\pi}{24}$

$VS = -1$



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

$\frac{3\pi}{24}$

$\pi/24$	-1
$4\pi/24 = \frac{\pi}{6}$	3
$\frac{7\pi}{24}$	-1
$\frac{10\pi}{24} = \frac{5\pi}{12}$	-5
$\frac{13\pi}{24}$	-1

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

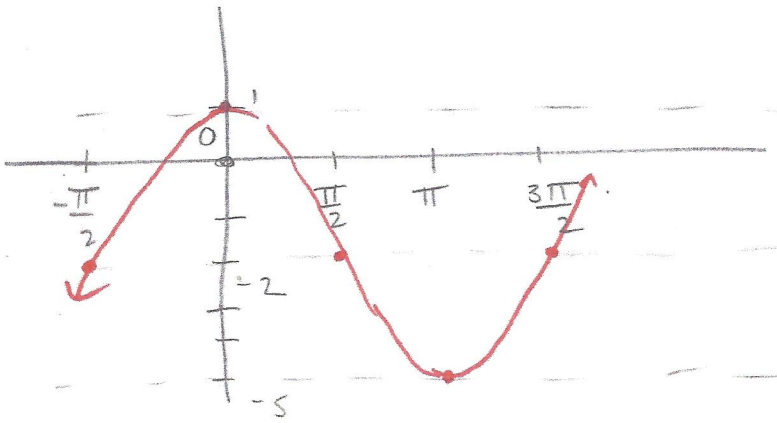
$A = 3$

$\text{Per} = 2\pi$

left! $PS = -\frac{\pi}{2}$

$VS = -2$

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



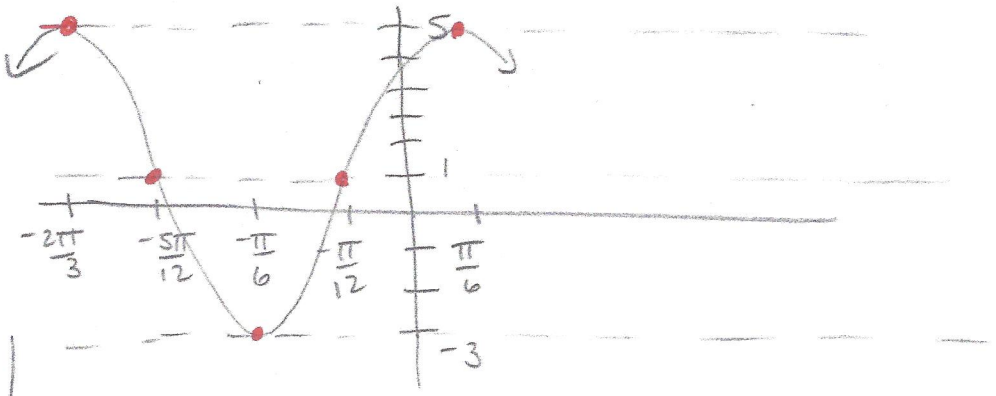
3. $y = 4\cos\left(2\theta + \frac{4\pi}{3}\right) + 1$

$A = 4$

$Per = \pi$

left $PS = -\frac{2\pi}{3}$

$VS = 1$



$\frac{\pi}{4} = \frac{3\pi}{12}$

$-\frac{8\pi}{12}$ $-\frac{2\pi}{3}$	
$-\frac{5\pi}{12}$	
$-\frac{2\pi}{12}$ $-\frac{\pi}{6}$	
$-\frac{\pi}{12}$	
$\frac{\pi}{6}$	

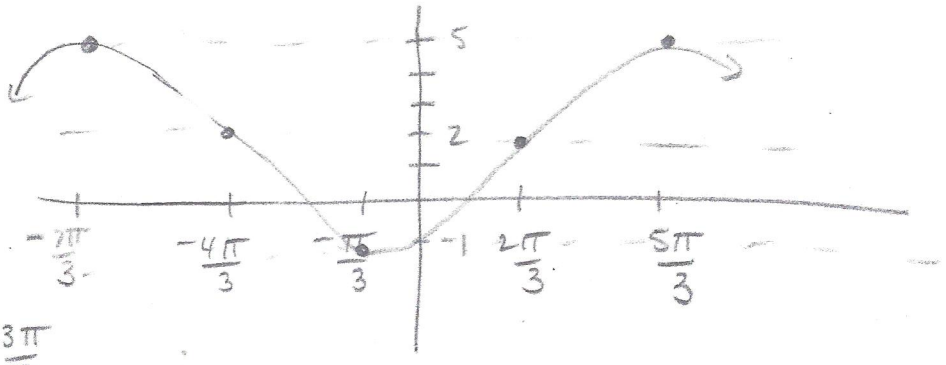
4. $y = 3\cos\left(\frac{\theta}{2} + \frac{7\pi}{6}\right) + 2$

$A = 3$

$Per = 4\pi$

left! $PS = -\frac{7\pi}{3}$

$VS = 2$



increments $= \pi$ $\frac{3\pi}{3}$

$-\frac{7\pi}{3}$	5
$-\frac{4\pi}{3}$	2
$-\frac{\pi}{3}$	-1
$\frac{2\pi}{3}$	2
$\frac{5\pi}{3}$	5

(5) $y = \sin\left(4\theta - \frac{\pi}{2}\right)$

(6) $y = -4\cos(\theta)$

(7) $y = 4\sin\left(\frac{\theta}{2} - \frac{\pi}{4}\right) + 1$

(8) $y = \sin\left(\frac{\theta}{3}\right)$

(9) $y = 4\cos\left(\frac{\theta}{2} - \frac{\pi}{4}\right) - 1$

(10) $y = 3\sin\left(3\theta - \frac{3\pi}{4}\right) - 1$

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(11) $y = \pm 15\sin\left(\frac{\theta}{2} - \frac{\pi}{4}\right) - 10$

(12) $y = \pm\frac{2}{3}\cos(6x + 2\pi) + 5$

(13) amp = .001 period = $\frac{1}{440}$

(14) (a) amp = 1.5; per = 10sec

(b) $y = 1.5\cos\left(\frac{\pi\theta}{5}\right)$

(15) c is a positive multiple of n

(16) $y = -9\cos\left(\frac{\pi}{2}t\right) + 2$

(17) (a) $y = 41\cos\left(\frac{\pi x}{150}\right) + 47$

(b) 74.4 ft.