

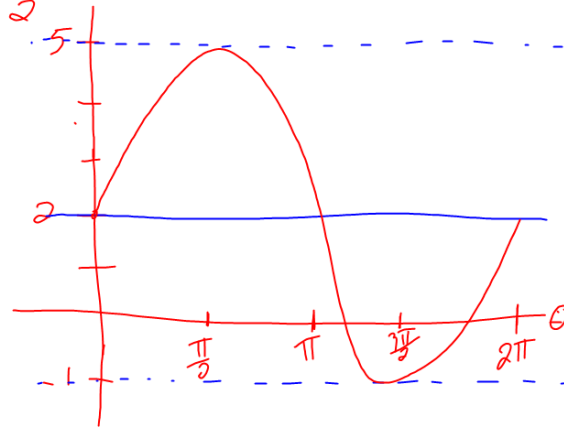
$$y = 3 \sin \theta + 2$$

$$A = 3$$

$$K = 1$$

$$h = 2$$

Vert. shift = 2
 Amplitude = 3
 Per = 2π



$$y = A \sin(K\theta - c) + h$$

$$y = A \cos(K\theta - c) + h$$

$c > 0$ right
 $c < 0$ left

$$\text{Phase shift} = \frac{c}{K}$$

ex. 1a $y = \sin(\theta + \pi)$

$$A = 1$$

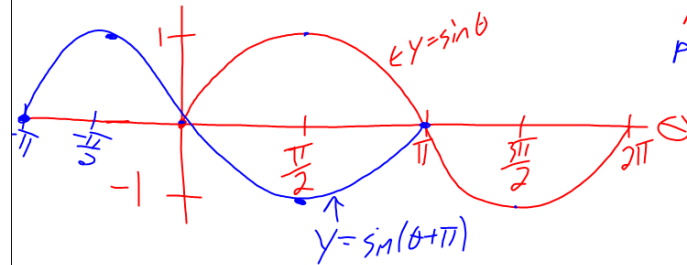
$$K = 1$$

$$c = -\pi$$

$$h = 0$$

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

$$\text{Phase Shift} = \frac{-\pi}{1} = -\pi$$



ex. 2b $y = \cos(2\theta - \frac{\pi}{2})$

$$A = 1$$

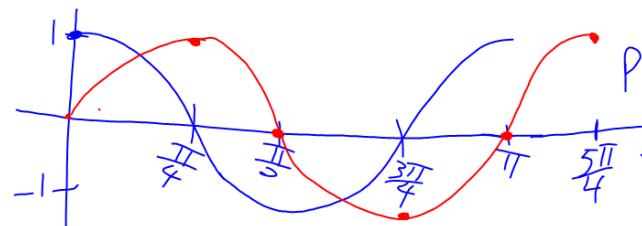
$$K = 2$$

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

$$h = 0$$

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

$$\text{P.S.} = \frac{\frac{\pi}{2}}{2} = \frac{\pi}{4}$$



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

$$V.S. = -6$$

$$Ampl = 4$$

$$Period = \frac{2\pi}{\frac{1}{2}} = 4\pi$$

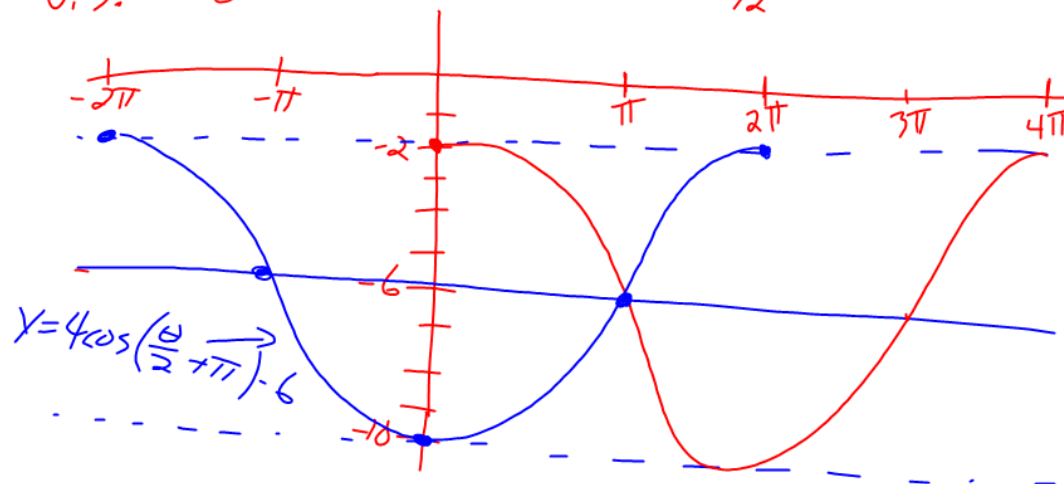
$$P.S. = \frac{-\pi}{\frac{1}{2}} = -2\pi$$

$$A = 4$$

$$C = -\pi$$

$$K = \frac{1}{2}$$

$$h = -6$$



Write an equation of a sine function with amplitude 4, period π , phase shift $-\frac{\pi}{8}$, and vertical shift 6.

$$y = A \sin(k\theta - c) + h$$

$$y = \pm 4 \sin\left(2\theta + \frac{\pi}{4}\right) + 6$$

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

$$P.S. = \frac{c}{k}$$

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

$$2\left(-\frac{\pi}{8}\right) = \frac{c}{2}$$

$$K = 2$$

$$-\frac{2\pi}{8} = c$$

$$-\frac{\pi}{4} = c$$

$$h = 2.9 + 2.2 \sin \left(\frac{\pi}{6.2} t - \frac{4.85\pi}{6.2} \right)$$

$$A = 2.2$$

$$h = 2.9$$

$$k = \frac{\pi}{6.2}$$

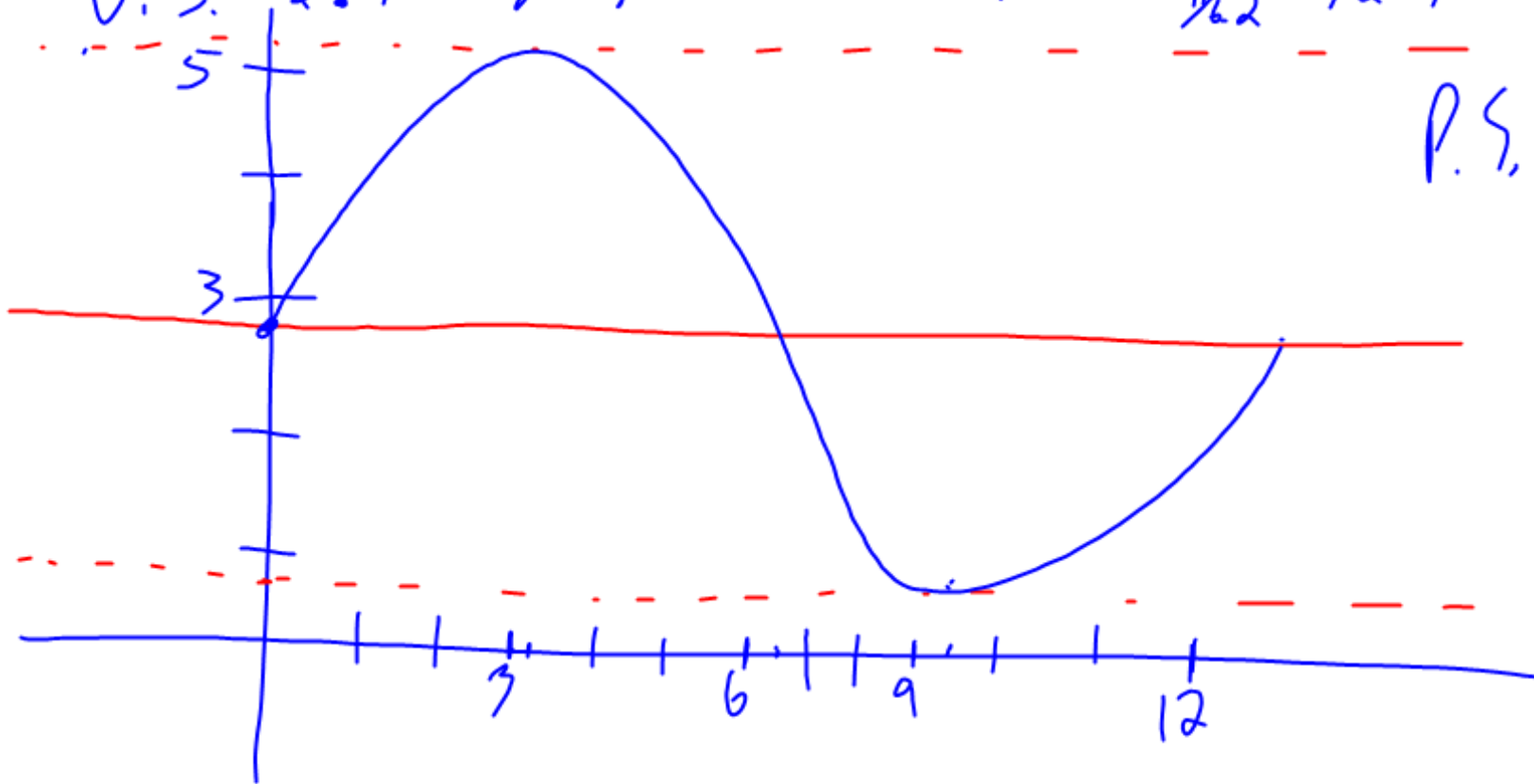
$$c = \frac{4.85\pi}{6.2}$$

$$V.S. = 2.9$$

$$Ampl = 2.2$$

$$Per = \frac{2\pi}{\frac{\pi}{6.2}} = 12.4$$

P.S.



p. 383-386

14-15, 17-18, 21-23, 27-

29, 31-32, 34-35, 41,

43, 54