

MTH113

Weds. 4-10-13

CLASS NOTES

PARENT SINE FUNCTION:  $y = \sin \theta$

$$y = A \sin B(\theta + C) + D$$

D = VERTICAL SHIFT

$$y = |A| \sin B(\theta + C) + D$$

|A| = amplitude

$$B \Rightarrow \frac{360^\circ}{|B|}$$

$$\Rightarrow \frac{2\pi}{|B|}$$

C = HORIZONTAL SHIFT

"PHASE SHIFT"

Argument  $(3\theta + 20)$

$$\begin{array}{ccc} & 3 & (\theta + \frac{20}{3}) \\ \nearrow & B & C \end{array}$$

(11)  
Pg 117

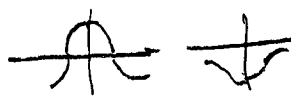
$$y = -\frac{3}{4} \cos(x) - 2$$

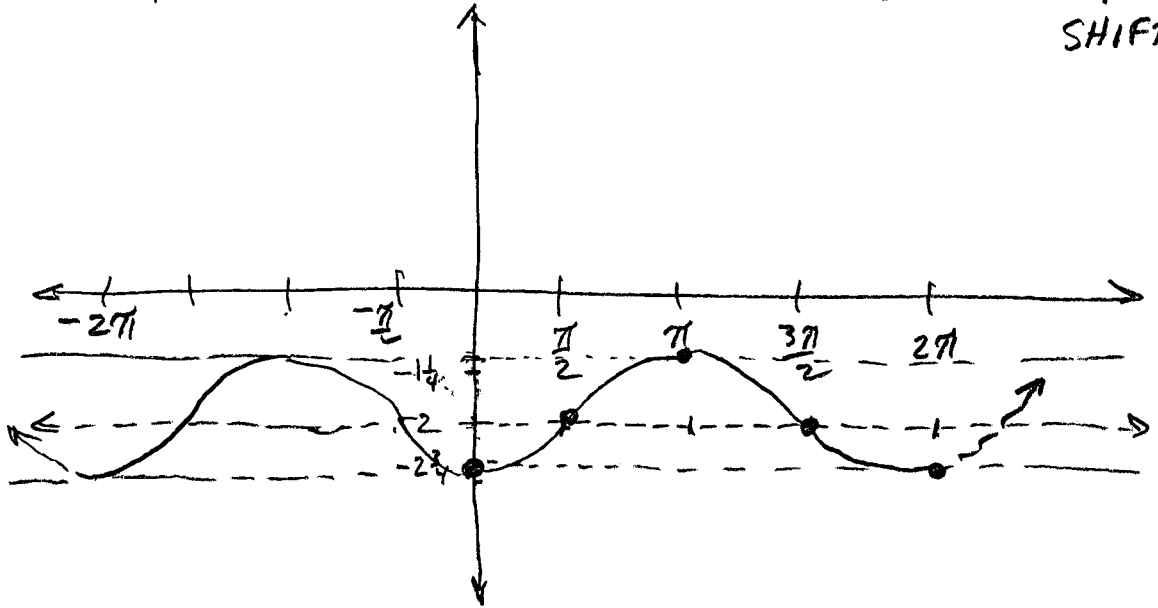
$$P = 2\pi$$

$$D = -2 \downarrow$$

$C = 0$  NO PHASE  
SHIFT

Amp =  $|\frac{3}{4}|$





(54)

PS11B

$$y = A \sin B(x + C) + D$$

$$Amplitude = |5|$$

$$D = 0$$

$$P = 4 \text{ radians}$$

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

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

$$y = 5 \sin \frac{\pi}{2} (x + 1)$$

$$y = 5 \sin \frac{\pi}{2} x + \frac{\pi}{2}$$

pg 118 (56)

$$y = A \sin(Bx + C) + D$$

↑  
horizontal shift is  $\frac{C}{B}$

$$A \sin B(x + C') + D$$

$$A = 2$$

$$D = 3$$

$$C' = 0$$

$$\text{Period} \Rightarrow 3\pi$$

$$\frac{2\pi}{|B|} = 3\pi \quad \therefore B = \frac{2}{3}$$

$$y = 2 \sin \frac{2}{3}(x + 0) + 3$$

$$y = 2 \sin \frac{2}{3}x + 3$$