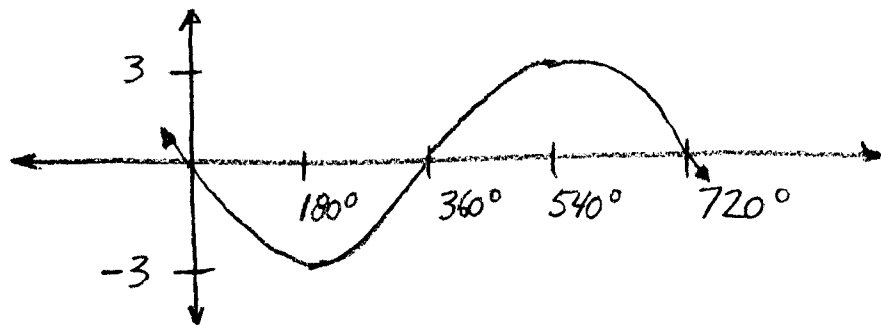


Alg. 2-BE - TUESDAY 2-22-11

① Identify the equation of the graphed function:



$$\text{Amplitude} = 3 \quad \text{period} = 720^\circ \Rightarrow \frac{360^\circ}{b} = 720^\circ$$

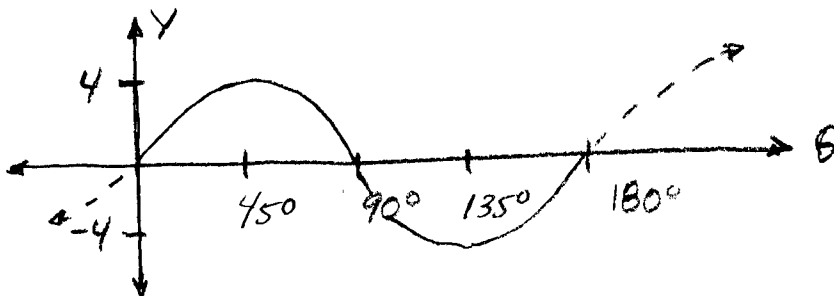
"Flipped" SIN $\Rightarrow \sin(-\theta)$

$$b = \frac{360}{720} = \frac{1}{2}$$

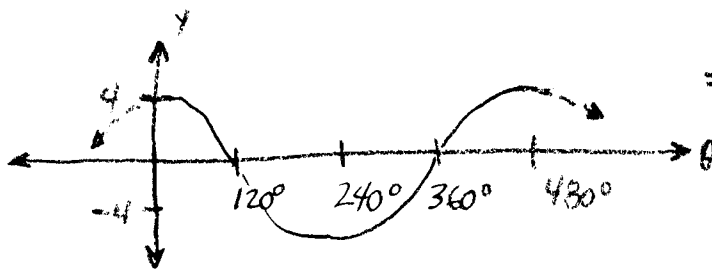
$$\therefore \boxed{y = 3\sin\left(-\frac{1}{2}\theta\right)}$$

Alg. 2 - Homework Review: Pg. 767 # 9, 10, 12

⑨ $y = 4 \sin 2\theta$ amp. = 4 period = $\frac{360^\circ}{|2|} = 180^\circ$

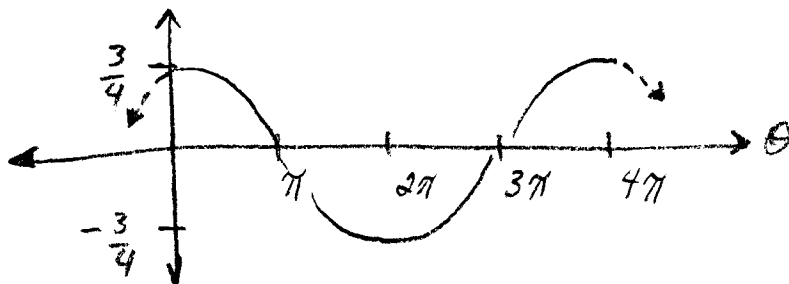


⑩ $y = 4 \cos \frac{3}{4}\theta$ amp. = 4 period = $\frac{360^\circ}{|\frac{3}{4}|}$



$= \frac{360 \cdot 4}{3} = 480^\circ$

⑫ $y = \frac{3}{4} \cos \frac{1}{2}\theta$ Amp. = $\frac{3}{4}$ period = $\frac{2\pi}{\frac{1}{2}} = 4\pi$



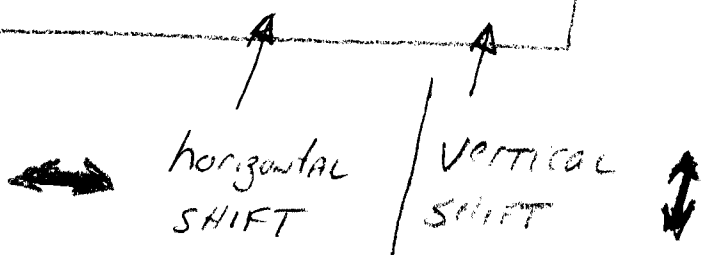
Recall: $y = a \sin(bx)$

↑ ↑

Amplitude Period $\Rightarrow \frac{360^\circ}{|b|}$

Two other positions AFFECT the "horizontal shift" and "vertical shift"

$y = a \sin [b(\theta - h)] + k$



ALSO CALLED "phase change"

" - " $\Rightarrow -(+h) = \text{RIGHT}$	+ UP
" + " $\Rightarrow (+h) = \text{LEFT}$	- DOWN

⊙ Ex $y = \sin(\theta - 30^\circ) + 5 \Rightarrow 30^\circ \rightarrow$
 $5 \uparrow$

⊙ Ex $y = \sin(\theta + 10^\circ) - 2 \Rightarrow 10^\circ \leftarrow$
 $2 \downarrow$

The 4 changes to the "base" sine & cosine functions are called "translations."

Ch 14-2 "Translations of Trigonometric Graphs"

(EX) $y = a \sin[b(\theta - h)] + k$

Amp

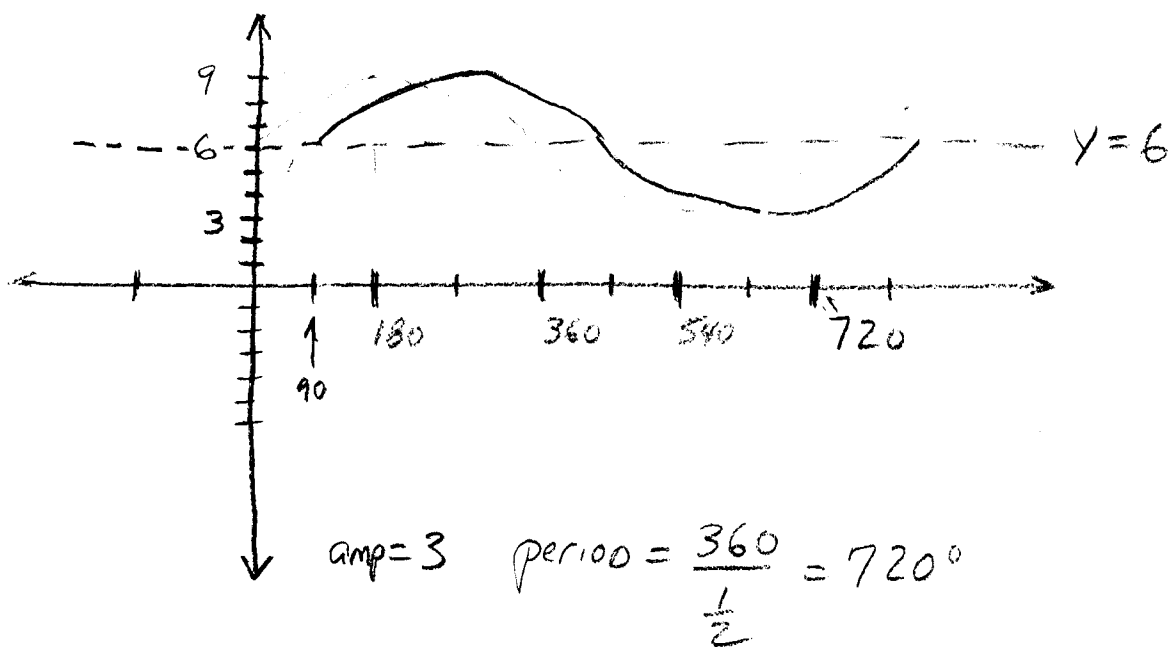
period = $\frac{360}{|b|}$

horizontal SHIFT
← X →

vertical SHIFT

Y = K = MIDLINE

$y = 3 \sin\left[\frac{1}{2}(\theta - 90^\circ)\right] + 6$
UP = 6
↳ 90° to right



LOOK AT (EX3) Pg. 772

$$y = 4 \cos \left[\frac{1}{2} \left(\theta - \frac{\pi}{3} \right) \right] - 6$$

State the vertical shift = ? $6 \downarrow$
horizontal shift = ? $\frac{\pi}{3} \rightarrow$
(phase shift)
Amplitude = ? 4
period = ? 4π
midline = ? $y = -6$

Homework: Pg 774 # 12, 15.