

Notes - Graphing Trig Functions (Phase Shift)

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

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

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

A: Amplitude (tan \Rightarrow no Amp)

B: period change $\frac{\sin \text{ or } \cos}{\frac{360^\circ}{B} \text{ or } \frac{2\pi}{B}}$ | $\frac{\tan}{\frac{180^\circ}{B} \text{ or } \frac{\pi}{B}}$

C: phase shift \Rightarrow left or right
($\theta + C$) ($\theta - C$)

D: vertical shift \Rightarrow up or down
+D -D

Graph each function using degrees.

1) $y = \sin(\theta + 60)$

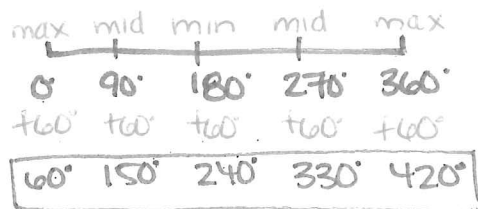
② $y = \cos(\theta - 60) + 0$

Amp: 1

Period: 360°

VS: none

PS: right 60°



3) $y = \tan(\theta - 135)$

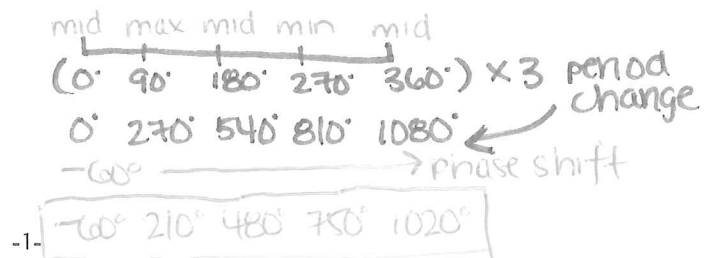
④ $y = \sin \frac{1}{3}(\theta + 60) + 0$

Amp: 1

Period: $\frac{360^\circ}{\frac{1}{3}} = 360 \cdot 3 = 1080^\circ$

VS: none

* PS: left 60° (always last)



5) $y = \cos 3(\theta - 90)$

6) $y = 3\cos 4(\theta - 270)$

7) $y = -1 + 3\sin \frac{1}{3}(\theta - 120)$

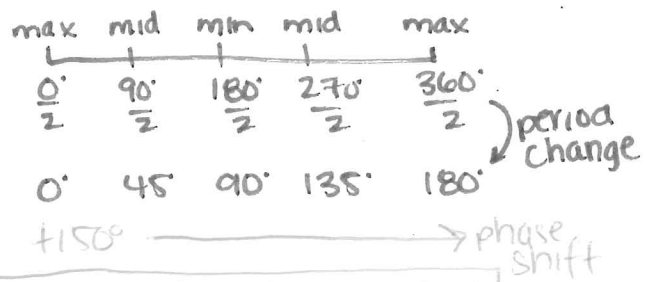
~~8)~~ $y = 4\cos \frac{2}{3}(\theta - 150) - 2$

Amp: 4

Period: $\frac{360^\circ}{2} = 180^\circ$

VS: down 2 (midline)

★ PS: right 150° (always last)



150° 195° 240° 285° 330°

Notes/HW: Graphing (Phase Shift-Day 3)

