

Notes - Graphing Trig Functions (Vertical Shift) <sup>→ Day 2</sup> Date \_\_\_\_\_ Period \_\_\_\_\_

$$y = A \sin B\theta + D$$

$$y = A \cos B\theta + D$$

A: Amplitude

B: Period Change  $\rightarrow \frac{360}{B}$  or  $\frac{2\pi}{B}$ D: Vertical Shift  $\Rightarrow$  +: up -: down

$$y = A \tan B\theta + D$$

A: No Amplitude / changes curve

B: Period change  $\Rightarrow \frac{180^\circ}{B}$  or  $\frac{\pi}{B}$ D: Vertical Shift  $\Rightarrow$  +: up -: down

Using degrees, find the amplitude and period of each function. Then graph.

1)  $y = \sin \theta + 2$

2)  $y = \cos \theta - 1$

3)  $y = \tan \theta - 2$

4)  $y = 2\cos \theta + 1$

5)  $y = -1 + 3\sin \theta$

6)  $y = 2 + \tan \frac{\theta}{2}$

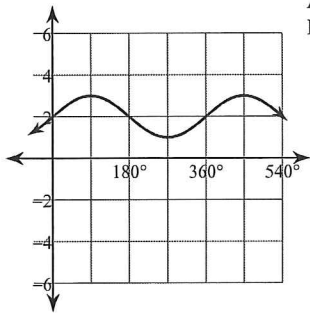
7)  $y = 2 + \sin 3\theta$

8)  $y = 3\cos 2\theta - 2$

9)  $y = 1 + 3\sin \frac{\theta}{4}$

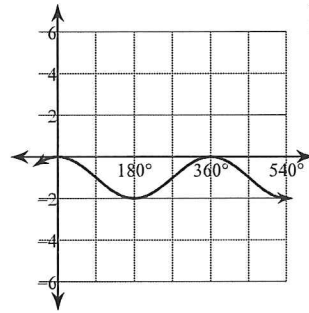
# Answers to Notes - Graphing Trig Functions (Vertical Shift) (ID: 1)

1)



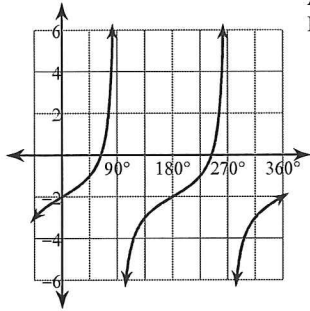
Amplitude: 1  
Period:  $360^\circ$

2)



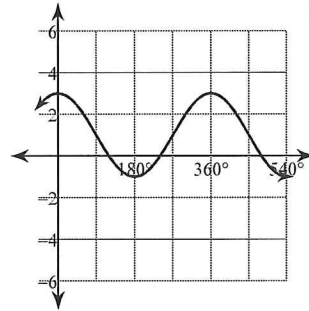
Amplitude: 1  
Period:  $360^\circ$

3)



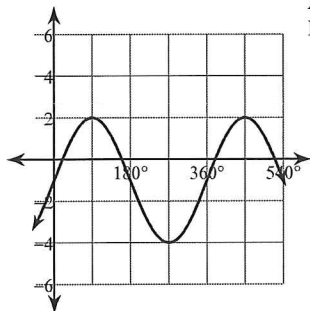
Amplitude: None  
Period:  $180^\circ$

4)



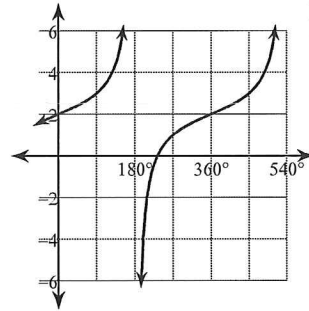
Amplitude: 2  
Period:  $360^\circ$

5)



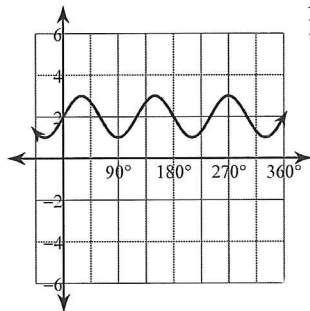
Amplitude: 3  
Period:  $360^\circ$

6)



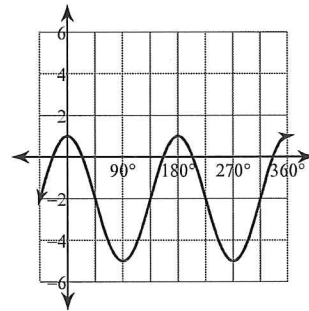
Amplitude: None  
Period:  $360^\circ$

7)



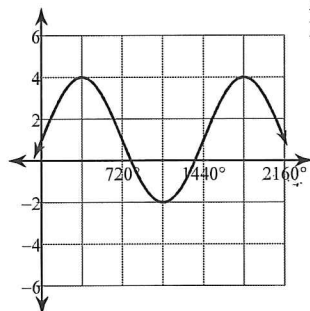
Amplitude: 1  
Period:  $120^\circ$

8)



Amplitude: 3  
Period:  $180^\circ$

9)

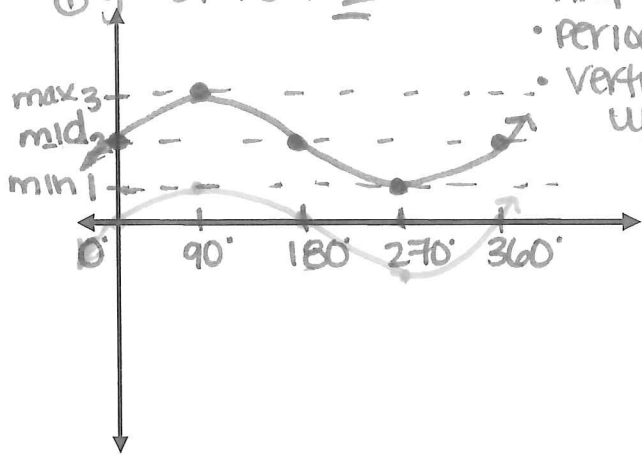


Amplitude: 3  
Period:  $1440^\circ$

# NOTES & HW: Graphing Vertical Shift (day 2)

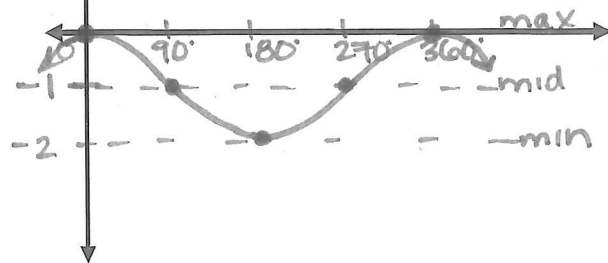
①  $y = \sin \theta + 2$

- Amp = 1
- Period =  $360^\circ$
- Vertical shift up 2



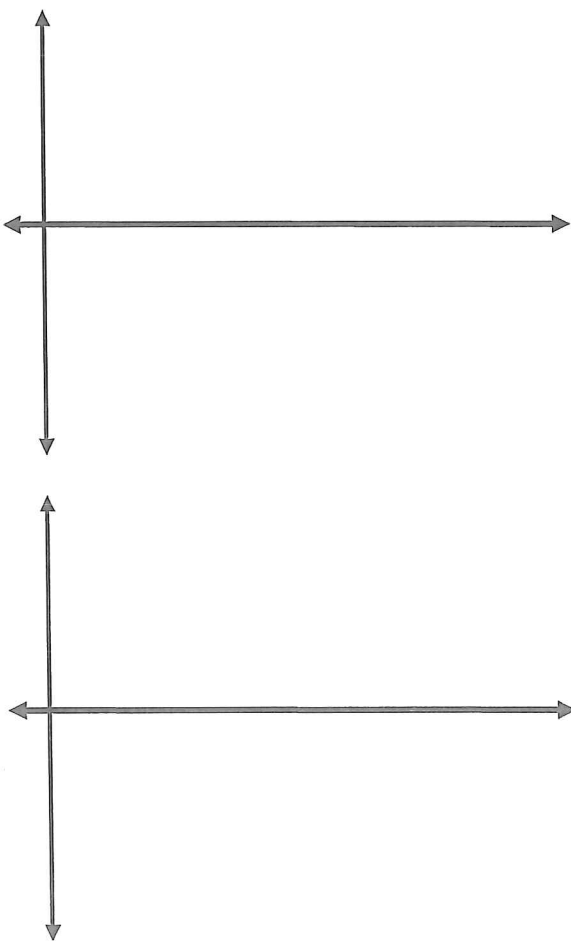
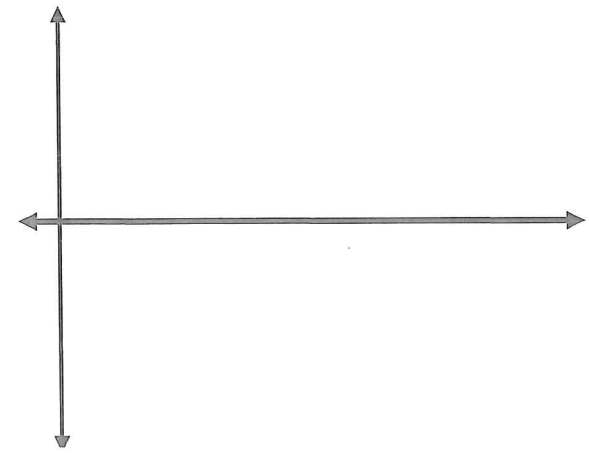
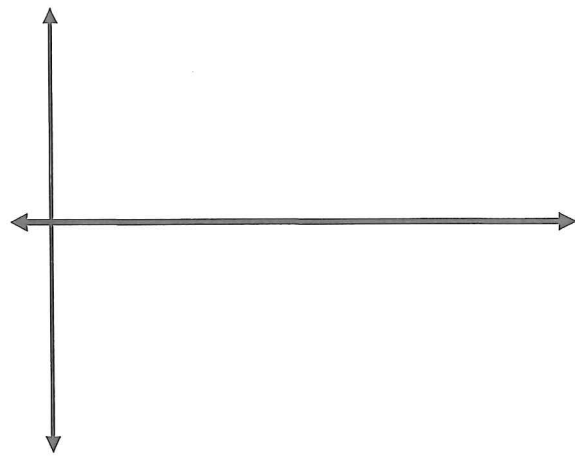
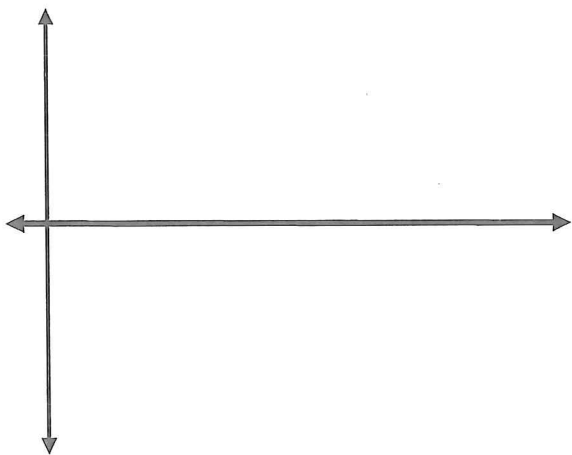
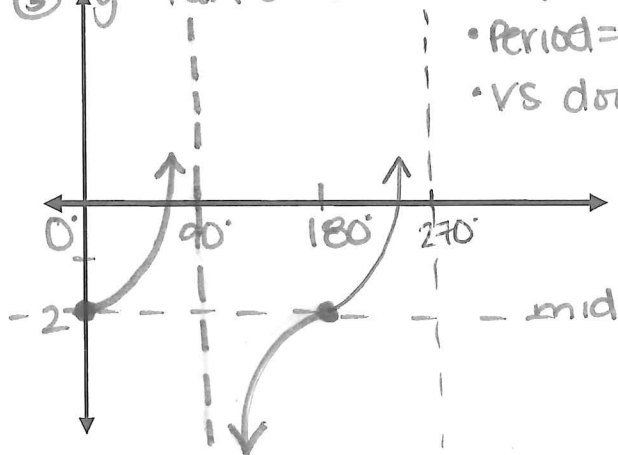
②  $y = \cos \theta - 1$

- Amp = 1
- Period =  $360^\circ$
- VS down 1

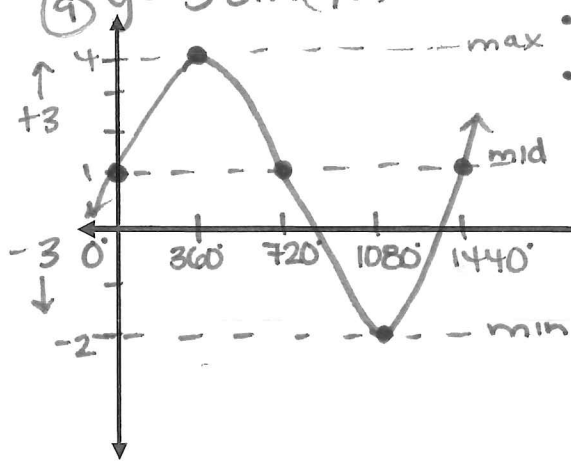


③  $y = \tan \theta - 2$

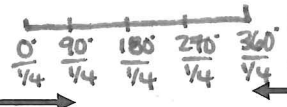
- Amp = None
- Period =  $180^\circ$
- VS down 2



⑨  $y = 3 \sin\left(\frac{1}{4}\theta\right) + 1$



- Amp: 3
- Period:  $\frac{360^\circ}{\frac{1}{4}} = 1440^\circ$



• vs up 1

