

Determine whether each sine or cosine function exhibits a phase shift or period change by circling the correct one. After, write in the phase shift or new period length.

1. $y = -3 \cos(2\theta) + 2$ phase shift _____ period change _____

2. $y = \sin\left(\theta - \frac{\pi}{2}\right) - 3$ phase shift _____ period change _____

3. $y = -\sin\left(\frac{1}{2}\theta\right)$ phase shift _____ period change _____

4. $y = 4 \cos(\theta - 2\pi) - 1$ phase shift _____ period change _____

5. $y = \frac{1}{2} \cos(4\theta) - 5$ phase shift _____ period change _____

6. $y = -3 \cos\left(\theta + \frac{\pi}{4}\right) + 2$ phase shift _____ period change _____

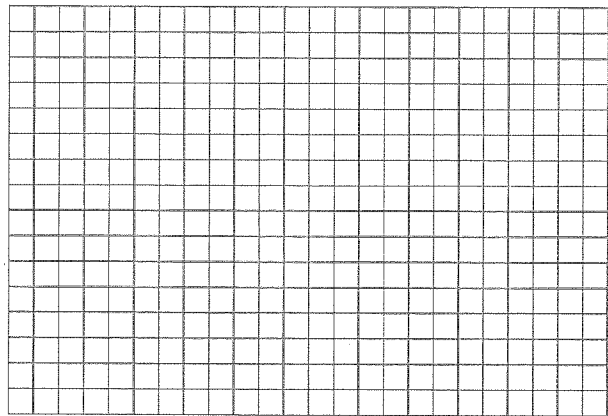
7. For the function $y = -3 \cos(\theta + \pi) - 2$, identify the vertical shift, amplitude, period, and phase shift. Graph the function and list the key information below.

Vertical Shift _____

Amplitude _____

Period _____

Phase Shift _____



Midline Intercept(s) _____ Domain _____

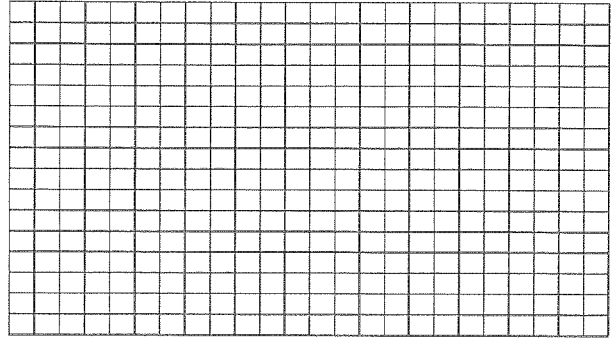
8. For the function $y = \sin(2\theta) + 3$, identify the vertical shift, amplitude, period, and phase shift. Graph the function and list the key information below.

Vertical Shift _____

Amplitude _____

Period _____

Phase Shift _____



Range _____ Midline Equation _____ Maximum(s) _____

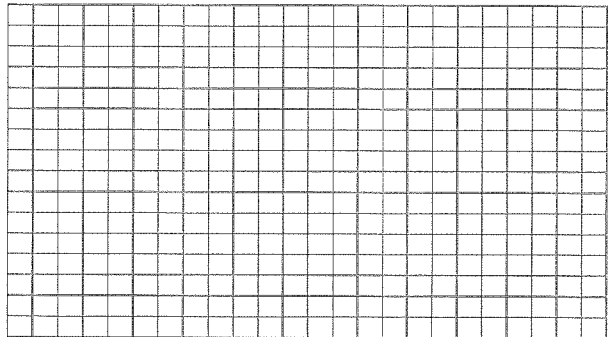
9. For the function $y = 2\cos\left(\frac{1}{2}\theta\right) - 1$, identify the vertical shift, amplitude, period, and phase shift. Graph the function and list the key information below.

Vertical Shift _____

Amplitude _____

Period _____

Phase Shift _____



y-intercept _____ Minimum(s) _____

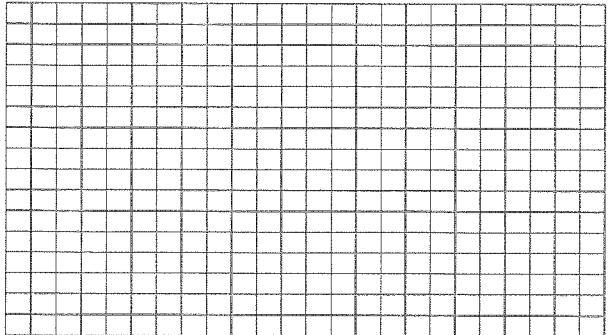
10. For the function $y = 2\sin\left(\theta - \frac{\pi}{2}\right) + 3$, identify the vertical shift, amplitude, period, and phase shift. Graph the function.

Vertical Shift _____

Amplitude _____

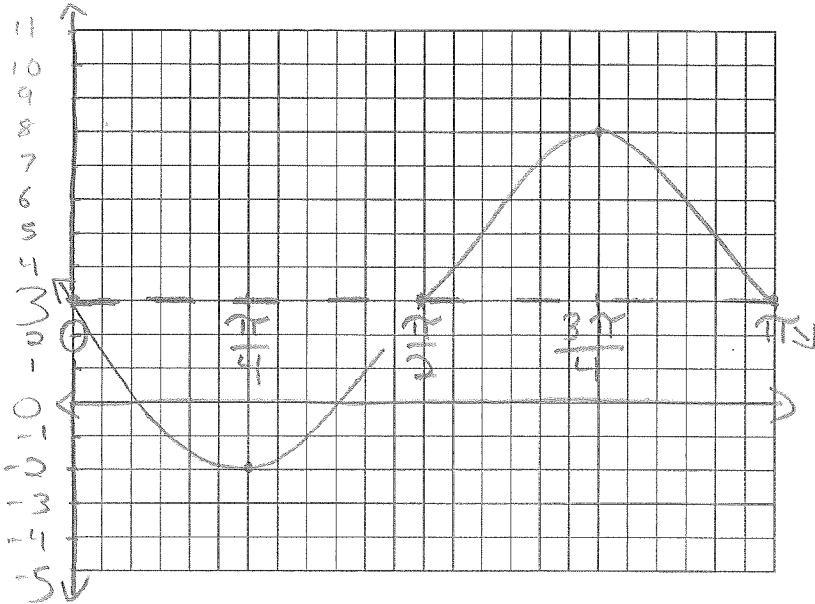
Period _____

Phase Shift _____



For Question #11-14, write the equation for the function that is graphed.

11.



+/- _____

Amp _____

Type _____

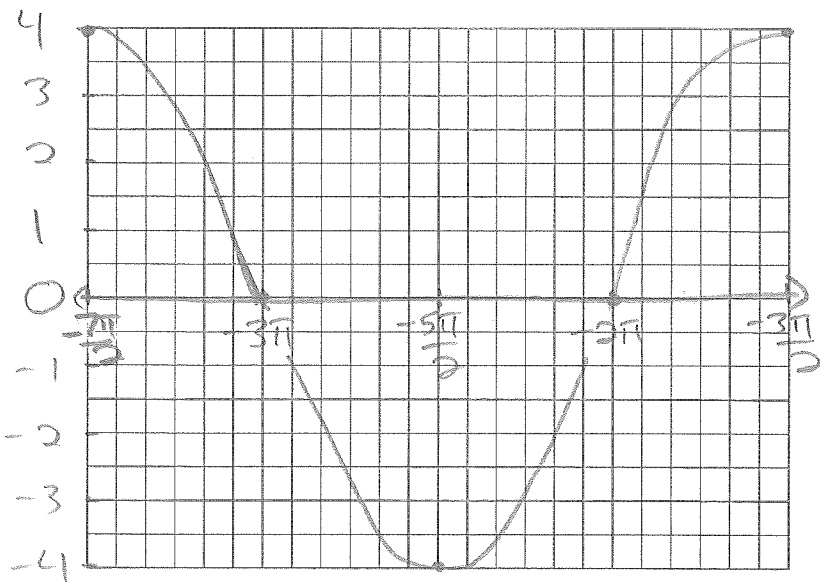
Period # _____

Phase Shift# _____

Vertical Shift # _____

Equation _____

12.



+/- _____

Amp _____

Type _____

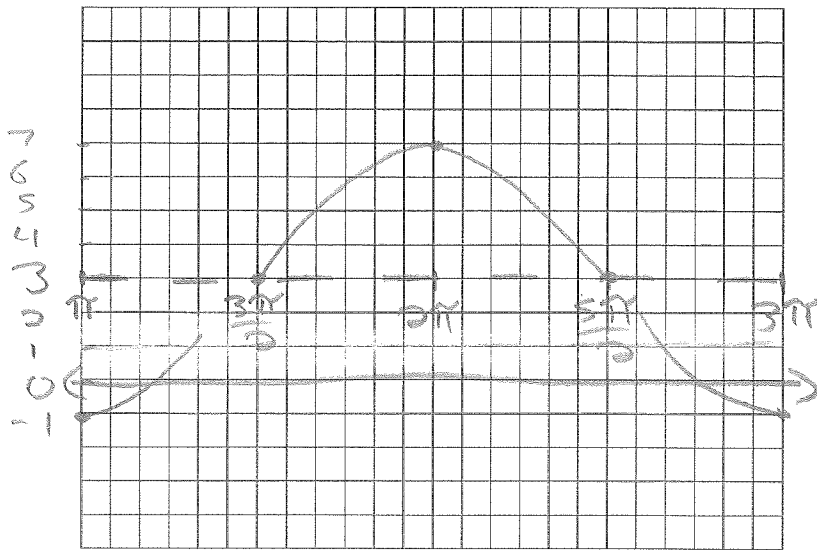
Period # _____

Phase Shift# _____

Vertical Shift # _____

Equation _____

13.



+/- _____

Amp _____

Type _____

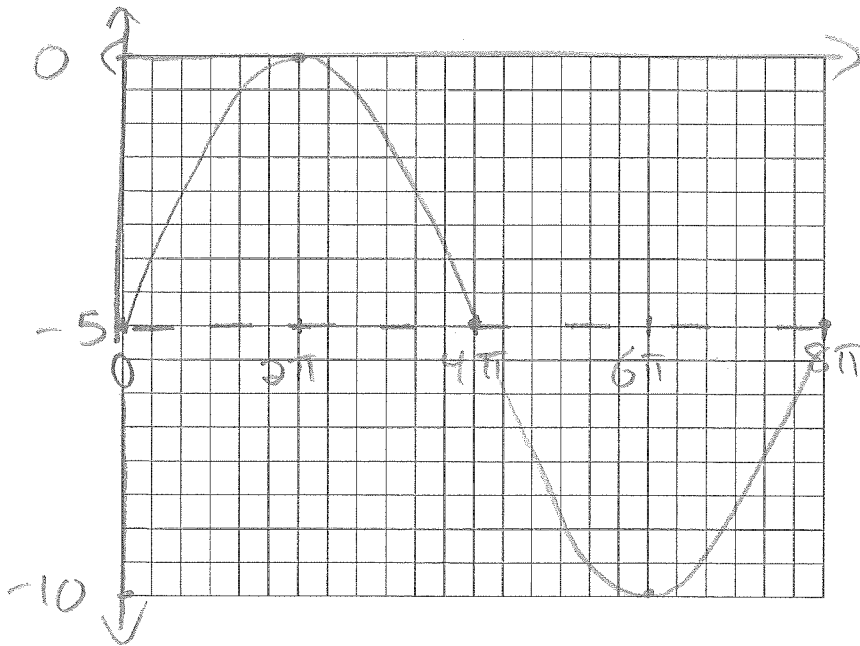
Period # _____

Phase Shift# _____

Vertical Shift # _____

Equation _____

14.



+/- _____

Amp _____

Type _____

Period # _____

Phase Shift# _____

Vertical Shift # _____

Equation _____