

This is our 1st problem set from our adventure with digital learning. It is only 2 pages, probably shorter than most of the problem sets you will see. This problem set must be completed and submitted electronically by the due date stated above. Print these pages if you can. If not, you may work on your own paper, but you must write out each question to accompany your work in order to receive full credit. You may take a picture of your work and submit it through REMIND (@mrwhitepr) or through the school email (mwhite@nfschool.net). When taking pictures, please do so with good light, shadows make the work difficult to see. Late submission will lose 5 points per day. Make sure your name is on it.

1) Identify the Amplitude, Period, Equation of the Midline and Phase Shift in each of the following:

	Amplitude	Period	Equation of the Midline	Phase Shift
$h(x) = -4 \sin(2x - 1) + 1$				
$g(x) = \frac{7}{2} \cos\left(x + \frac{\pi}{3}\right)$				
$m(x) = \sin\left(\frac{1}{2}\pi x - \pi\right) - 3$				

2) When graphed, the line $y = 14$ would not intersect the graph of which of the following functions?

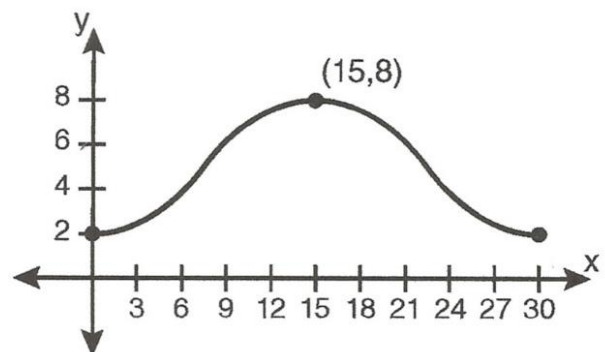
- (1) $y = 5 \cos(x) + 9$ (3) $y = 2 \sin(x) + 15$
 (2) $y = -6 \cos(x) + 10$ (4) $y = 3 \sin(x) + 20$

3) Which of the following functions has a maximum value of 25?

- (1) $y = 25 \sin(x) + 12$ (3) $y = 8 \cos(x) + 17$
 (2) $y = -10 \cos(x) + 35$ (4) $y = 5 \sin(x) + 15$

4) Which equation is graphed in the diagram below?

- A) $y = -3 \cos\left(\frac{\pi}{15}x\right) + 5$
 B) $y = -3 \cos\left(\frac{\pi}{30}x\right) + 8$
 C) $y = 3 \cos\left(\frac{\pi}{30}x\right) + 8$
 D) $y = 3 \cos\left(\frac{\pi}{15}x\right) + 5$



5) Given the function $g(x) = 2\cos(2x) + 1$

a) Identify the:

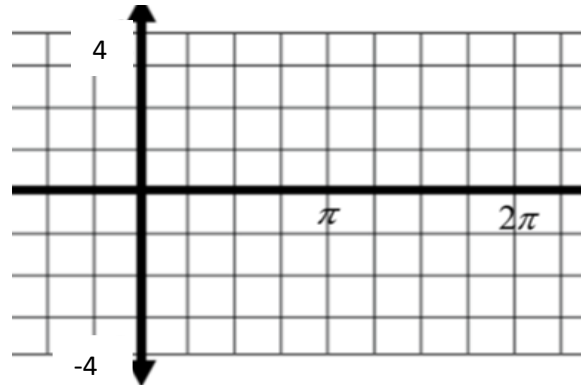
i) equation of the midline

ii) amplitude

iii) period:

b) Sketch a graph of the function

over the interval $[-\pi, 3\pi]$



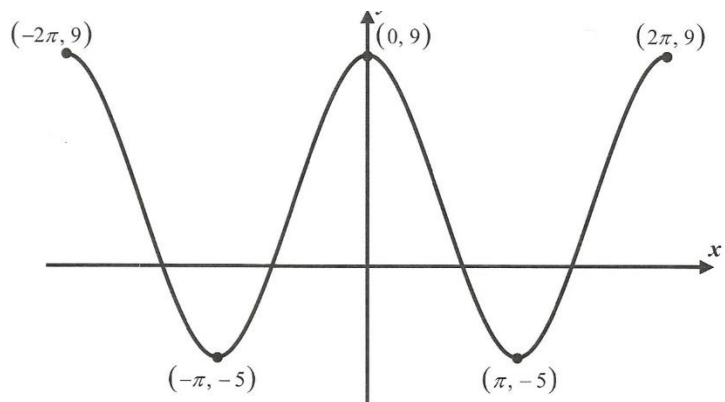
6) Given the graph of $f(x)$

a) Identify the:

i) equation of the midline

ii) amplitude

iii) period:



b) Write a trigonometric function in the form $f(x) = a \cdot \cos(bx) + k$ for the graph above

7) Sketch a graph of the function $y = 2 \sin\left(\frac{1}{2}x - \frac{1}{4}\pi\right) + 2$ over the interval shown.

Equation of the Midline:

Amplitude:

Period:

Phase Shift:

