PreCalculus **Name_____**
WS: Chapter 4, Part II **Date_____Block _____**

In 1 – 3, choose the best answer.

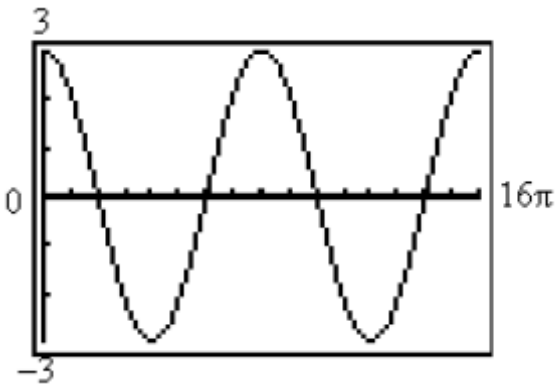
1. Which one of the equations below matches the graph?

(A) $y = -3\sin 4x$

(B) $y = 3\cos 4x$

(C) $y = 3\sin \frac{1}{4}x$

(D) $y = 3\cos \frac{1}{4}x$



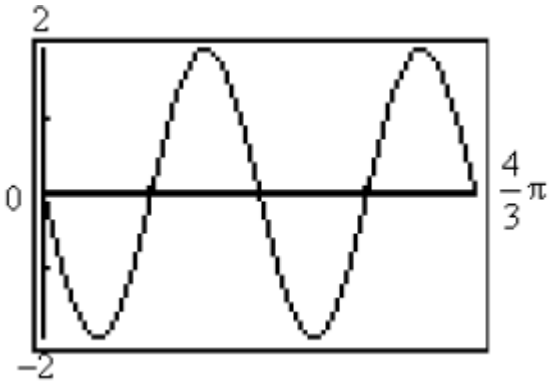
2. Which one of the equations below matches the graph?

(A) $y = -2\cos 3x$

(B) $y = 2\sin \frac{1}{3}x$

(C) $y = -2\sin 3x$

(D) $y = -2\sin \frac{1}{3}x$



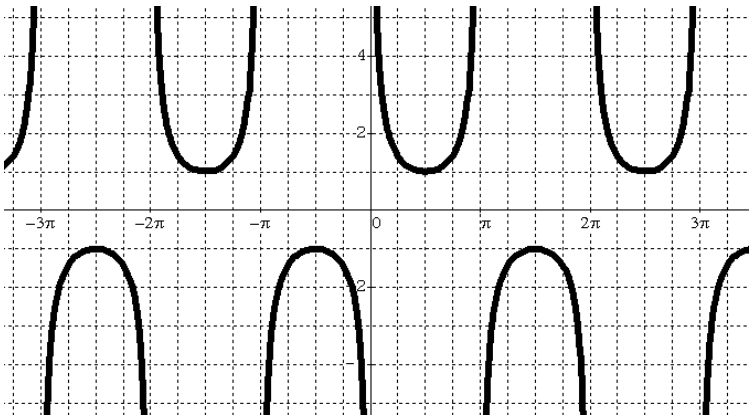
3. Which one of the equations matches the graph?

(A) $y = \cot x$

(B) $y = \sec x$

(C) $y = \csc x$

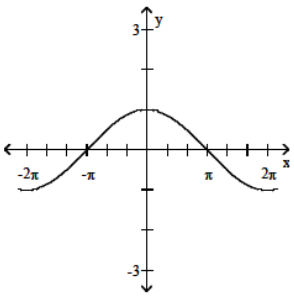
(D) $y = \csc x + 1$



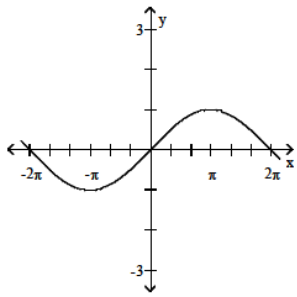
In 4 - 5, match the given function to its graph.

4. 1) $y = \sin\frac{1}{2}x$ 2) $y = \frac{1}{2}\cos x$ 3) $y = \frac{1}{2}\sin x$ 4) $y = \cos\frac{1}{2}x$

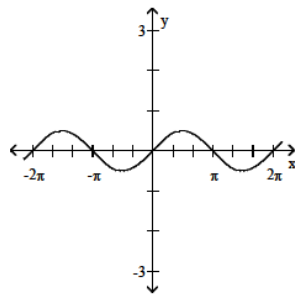
A



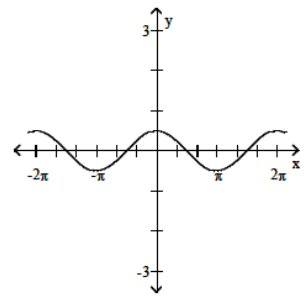
B



C

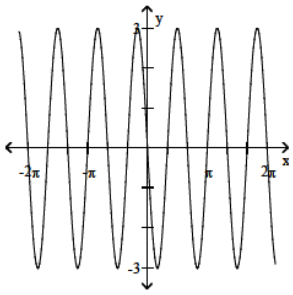


D

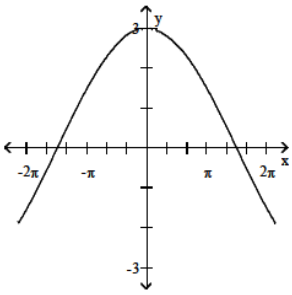


5. 1) $y = -3\sin 3x$ 2) $y = -3\sin\frac{1}{3}x$ 3) $y = 3\cos 3x$ 4) $y = 3\cos\frac{1}{3}x$

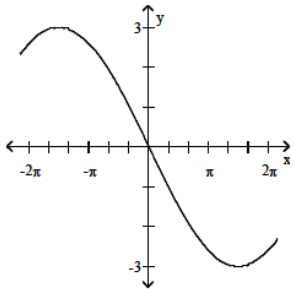
A



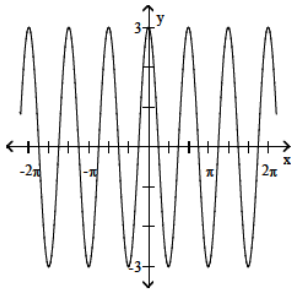
B



C



D

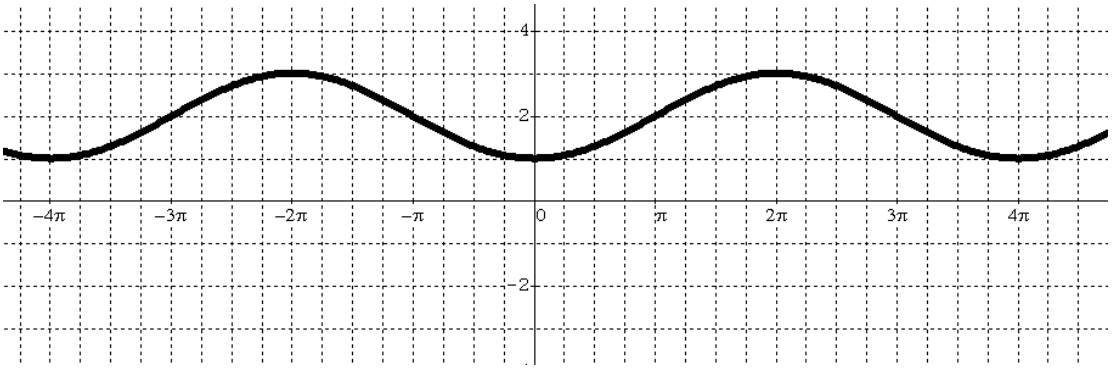


6. Find the period of $y = \frac{5}{8}\sin\left(\frac{8\pi}{3}x\right)$.

7. Write the equation of a sine function that has the given characteristics.

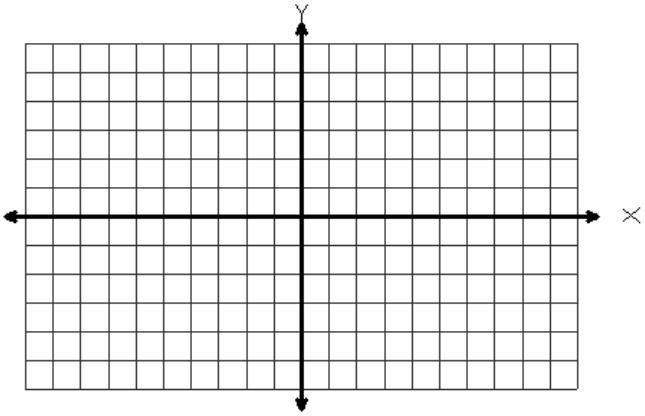
   Amplitude: 5, Period: 4π, Phase Shift: $-\frac{\pi}{4}$

8. Write ***three different equations*** that could produce the graph below.

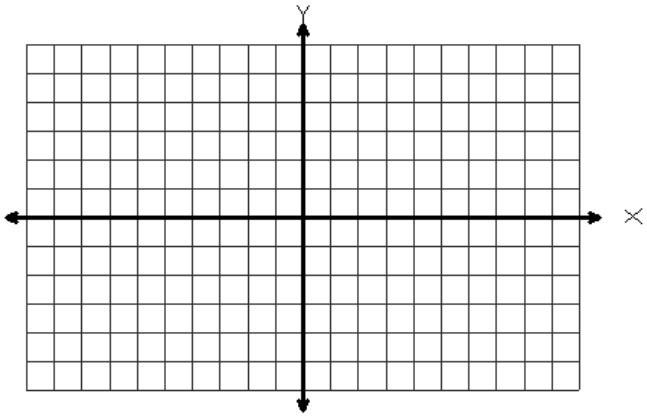


In 9 - 14, sketch the graph of each function. Identify any and all transformations of the parent graph first, and be sure to include two full periods.

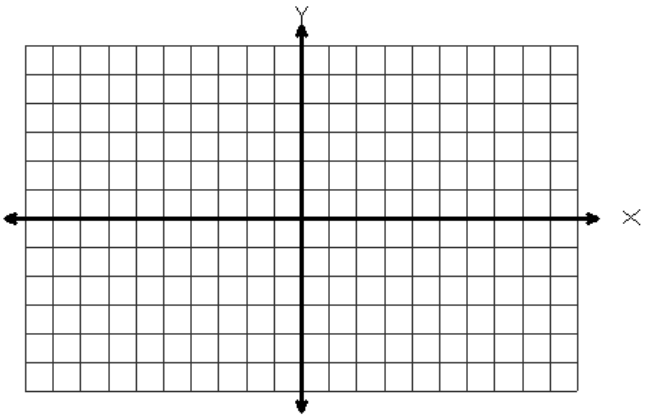
9.) $y = -3\sin\left(\frac{1}{2}x\right)$



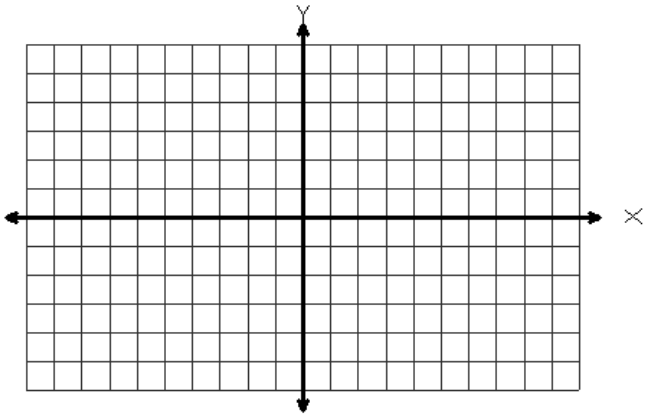
10.) $y = 2\cos\left(x - \frac{\pi}{2}\right) + 2$



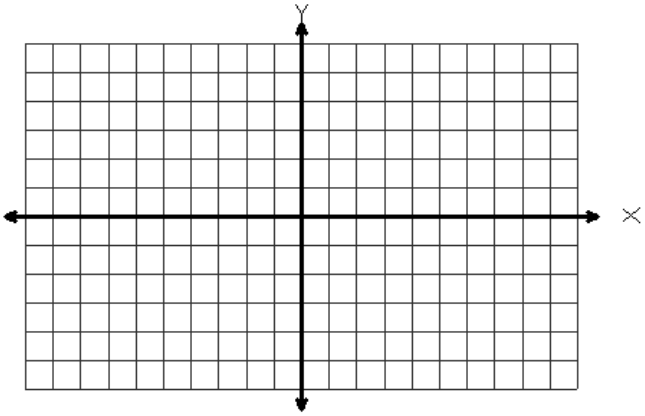
11.) $y = 4\csc\left(2x + \frac{\pi}{2}\right) + 1$



12.) $y = -3\sec(x + \pi) - 2$



13.) $y = -4\tan\left(x + \frac{\pi}{4}\right)$



14.) $y = 3\cot\left(\frac{1}{2}x + \frac{\pi}{2}\right) - 1$