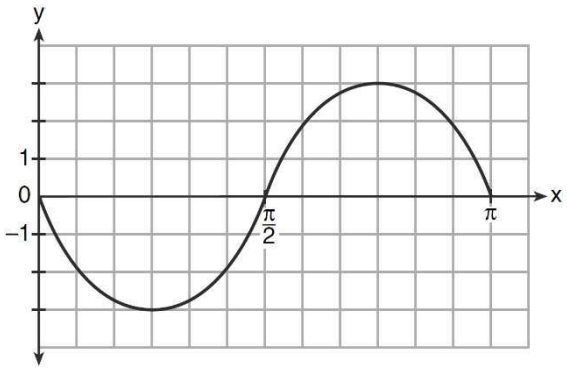
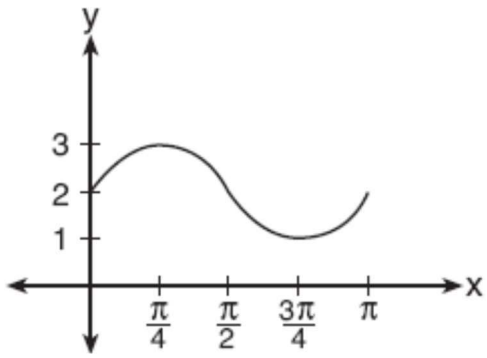
Name _____ Date _____

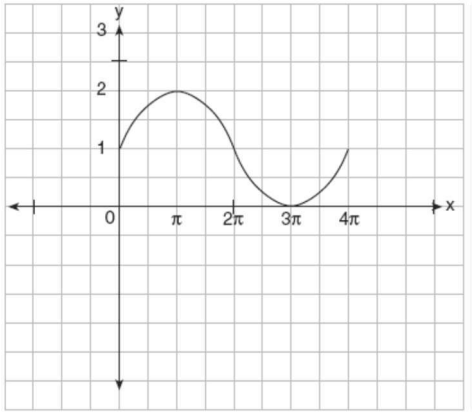
Mr. Schlansky Pre Calculus

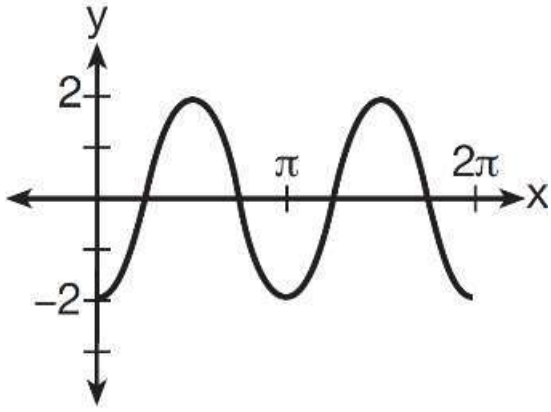
Writing Equations of Sinusoidal Graphs

Write an equation for the graph of the trigonometric functions shown below.

1. 

2. 

3. 

4. 

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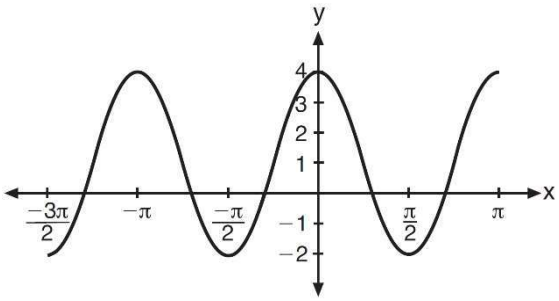
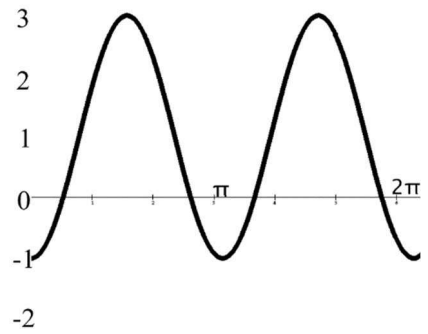
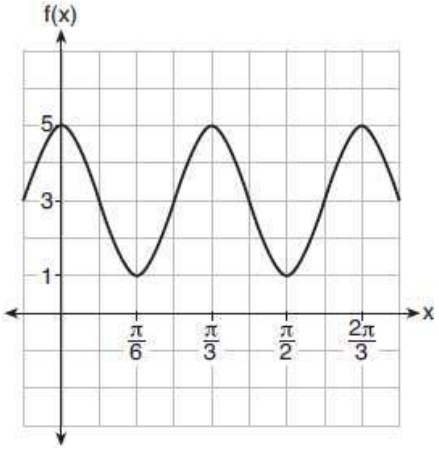

y
x
4
3
2
1
−1
−2
$\frac{-3\pi}{2}$
$-\pi$
$\frac{-\pi}{2}$
$\frac{\pi}{2}$
π

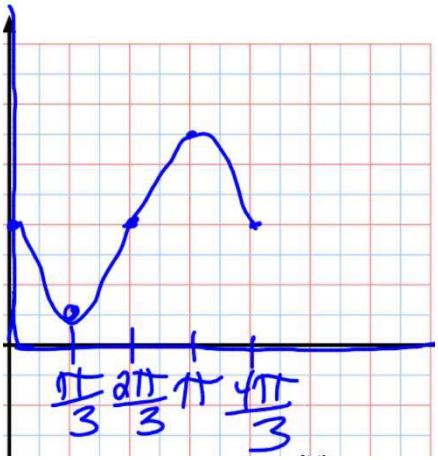
6.


3
2
1
0
-1
-2
π
2π

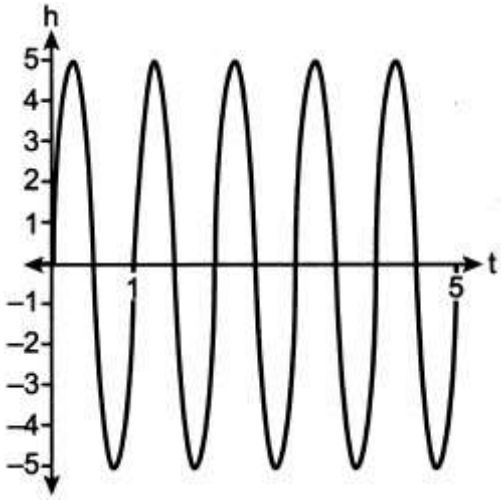
7.


f(x)
x
5
3
1
$\frac{\pi}{6}$
$\frac{\pi}{3}$
$\frac{\pi}{2}$
$\frac{2\pi}{3}$

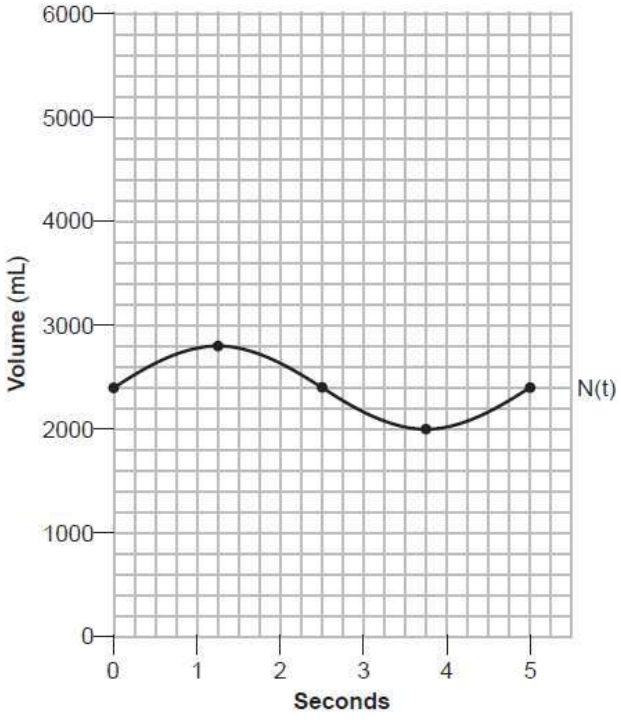
8.


$\frac{\pi}{3}$
$\frac{2\pi}{3}$
π
$\frac{4\pi}{3}$

9.


h
t
5
4
3
2
1
−1
−2
−3
−4
−5
1
5

10.


6000
5000
4000
3000
2000
1000
0
Volume (mL)
N(t)
0
1
2
3
4
5
Seconds

11. The depth of the water at a marker 20 feet from the shore in a bay is depicted in the graph below.

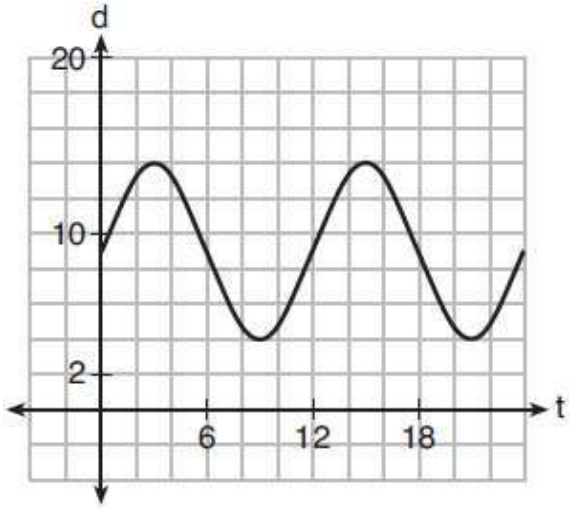
If the depth, d, is measured in feet and time, t, is measured in hours since midnight, what is an equation for the depth of the water at the marker?

1) $d = 5\cos\left(\frac{\pi}{6}t\right) + 9$

2) $d = 9\cos\left(\frac{\pi}{6}t\right) + 5$

3) $d = 9\sin\left(\frac{\pi}{6}t\right) + 5$

4) $d = 5\sin\left(\frac{\pi}{6}t\right) + 9$



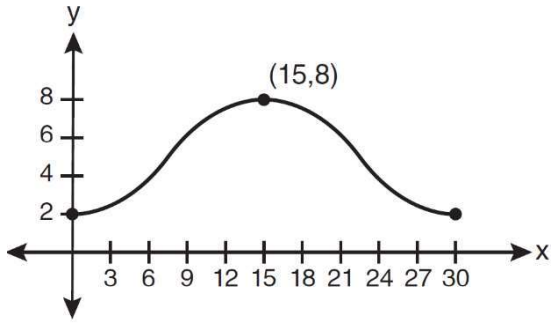
12. Which equation is graphed in the diagram below?

1) $y = 3\cos\left(\frac{\pi}{30}x\right) + 8$

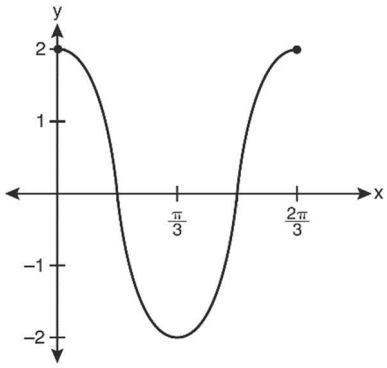
2) $y = 3\cos\left(\frac{\pi}{15}x\right) + 5$

3) $y = -3\cos\left(\frac{\pi}{30}x\right) + 8$

4) $y = -3\cos\left(\frac{\pi}{15}x\right) + 5$



13. Which equation is represented by the graph below?



1) $y = 2\cos 3x$

2) $y = 2\sin 3x$

3) $y = 2\cos\frac{2\pi}{3}x$

4) $y = 2\sin\frac{2\pi}{3}x$