

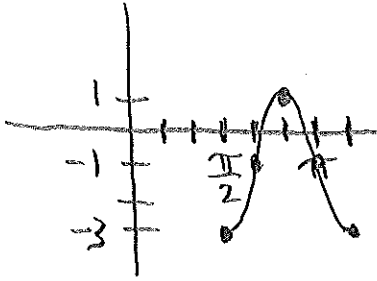
# Test Review #4

Graph the function, and provide the following:

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

Period  $\frac{2\pi}{3}$  range  $[-3, 1]$

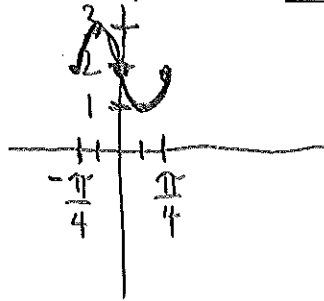
phase shift Right  $\frac{\pi}{2}$  Amplitude 2



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

Period  $\frac{2\pi}{4} = \frac{\pi}{2}$  range  $[1, 3]$

phase shift left  $\frac{\pi}{4}$  Amplitude 1



Given the equation, find the following:

3.  $y = -3 \sin \left( \frac{1}{8} \left( x - \frac{\pi}{2} \right) \right) + 5$

Period  $\frac{2\pi}{1/8} = 16\pi$  range  $[2, 8]$

phase shift Right  $\frac{\pi}{2}$  Amplitude 3

$\left( \frac{1}{2} (x + \pi) \right)$

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

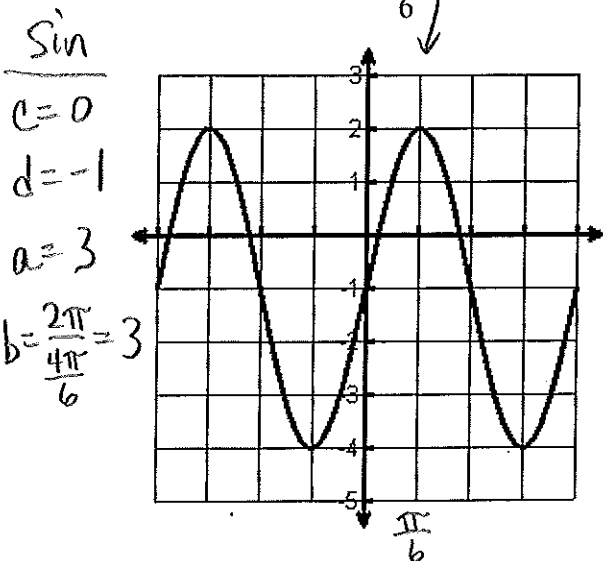
Period  $\frac{2\pi}{1/2} = 4\pi$  range  $[-4, 2]$

phase shift left  $\pi$  Amplitude 3

Write the equation for the graph.

5.  $y = 3 \sin(3x) - 1$

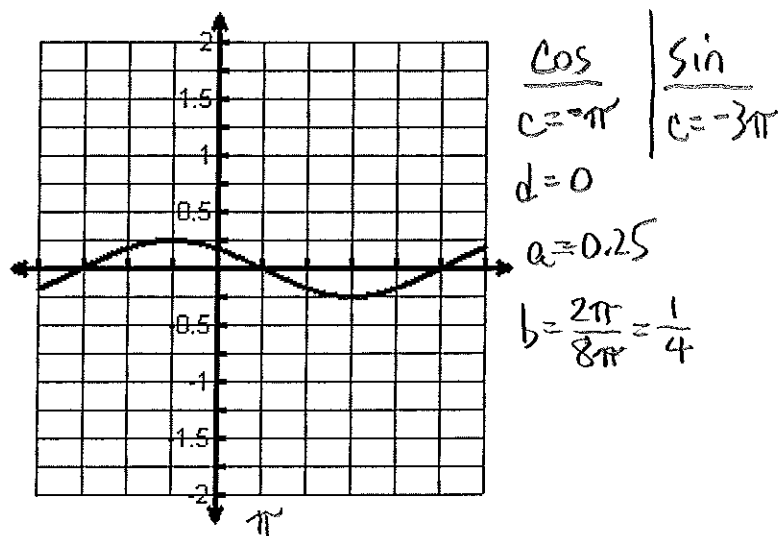
Horz Inc:  $\frac{\pi}{6}$



6.  $y = 0.25 \cos \left( \frac{1}{4} (x + \pi) \right)$

$y = 0.25 \sin \left( \frac{1}{4} (x + 3\pi) \right)$

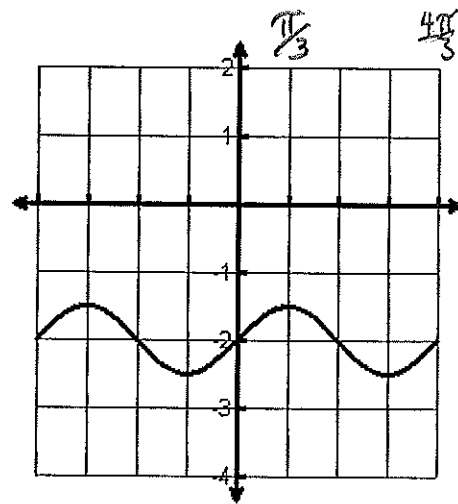
Horz inc:  $\pi$



Write the equation for the graph.

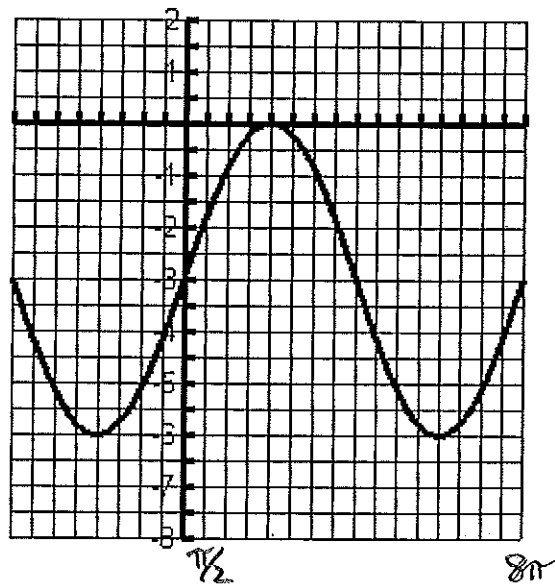
7.  $y = \frac{1}{2} \sin\left(\frac{3}{2}x\right) - 2$

Horz Inc:  $\frac{\pi}{3}$        $\frac{\sin}{c=0}$        $a = \frac{1}{2}$   
 $d = -2$        $b = \frac{2\pi}{\frac{4\pi}{3}} = \frac{3}{2}$



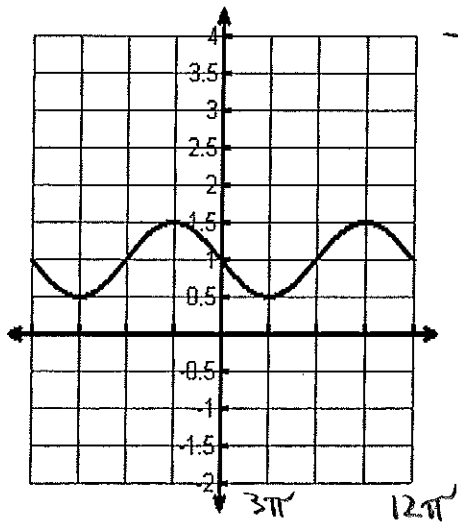
8.  $y = 3 \sin\left(\frac{1}{4}x\right) - 3$

Horz inc:  $\frac{\pi}{2}$        $\frac{\sin}{c=0}$        $a = 3$   
 $d = -3$        $b = \frac{2\pi}{8\pi} = \frac{1}{4}$



9.  $y = -0.5 \sin\left(\frac{1}{6}x\right) + 1$

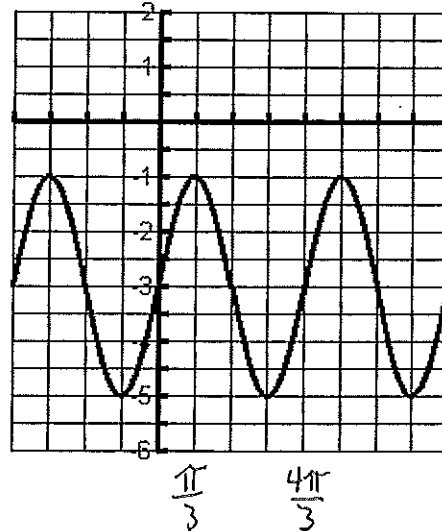
Horz inc:  $3\pi$



$-\sin$   
 $c = 0$   
 $d = 1$   
 $a = 0.5$   
 $b = \frac{2\pi}{12\pi} = \frac{1}{6}$

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

Horz inc:  $\frac{\pi}{3}$



$\frac{\sin}{c=0}$   
 $d = -3$   
 $a = 2$   
 $b = \frac{2\pi}{\frac{4\pi}{3}} = \frac{3}{2}$

Find the exact value of the following without using a calculator.

11.  $\tan 120^\circ = \underline{-\sqrt{3}}$

12.  $\sin \frac{4\pi}{3} = \underline{-\frac{\sqrt{3}}{2}}$

13.  $\cos \frac{3\pi}{4} = \underline{-\frac{1}{\sqrt{2}}}$

14.  $\csc \frac{5\pi}{2} = \underline{1}$

15.  $\sec 330^\circ = \underline{\frac{2}{\sqrt{3}}}$

16.  $\cot 270^\circ = \underline{0}$

17.  $\tan \frac{\pi}{2} = \underline{\text{Undefined}}$

18.  $\sec 180^\circ = \underline{-1}$

19.  $\cot \frac{3\pi}{2} = \underline{0}$

Find the solution(s) for the equation where  $0^\circ \leq \theta < 360^\circ$ .

$45^\circ, 135^\circ$

20.  $\sin \theta = \frac{1}{\sqrt{2}}$

$45^\circ, \text{I}, \text{II}$

$180^\circ$

21.  $\cos \theta = -1$

$180^\circ$

$0^\circ, 180^\circ$

22.  $\tan \theta = 0$

$\sin \theta = 0$

$0^\circ, 180^\circ$

23.  $\csc \theta = \text{undefined}$

$\sin \theta = 0$

Use a graphing Calculator to evaluate the trigonometric functions. Round your answers to 3 decimal places. (Remember to check your mode)

24.  $\cot(-8.79) = \underline{1.358}$

25.  $\sec(928^\circ) = \underline{-1.133}$

26.  $\sin\left(\frac{51\pi}{29}\right) = \underline{-0.688}$

27.  $\sin(133^\circ 59' 10'') = \underline{0.720}$

28.  $\tan\left(\frac{9\pi}{15}\right) = \underline{-3.078}$

29.  $\cos(4.123) = \underline{-0.556}$

