

WS #1

Name _____

Hour _____

Determine the amplitude and period of each function. (Write Period in both Radian and Degree)

1. $y = \sin 4x$

2. $y = \cos 5x$

3. $y = 2 \sin x$

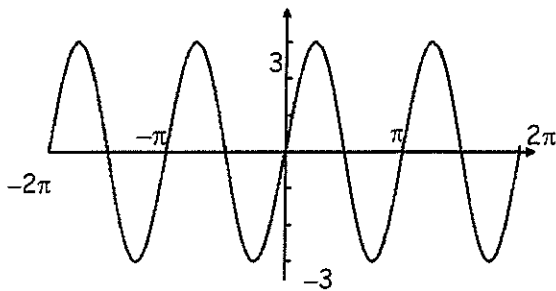
4. $y = -4 \sin 3x$

5. $y = 2 \sin (-4x)$

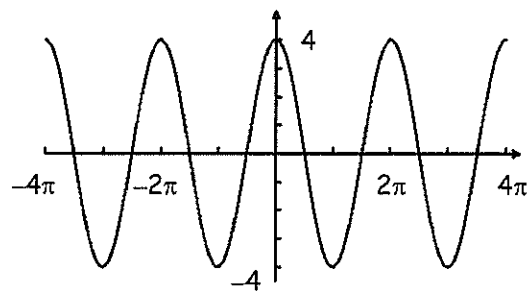
6. $y = 3 \sin \frac{2}{3}x$

Give the amplitude and period of each function graphed below. Then write an equation of each graph.

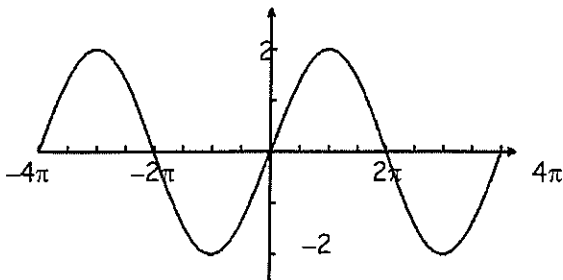
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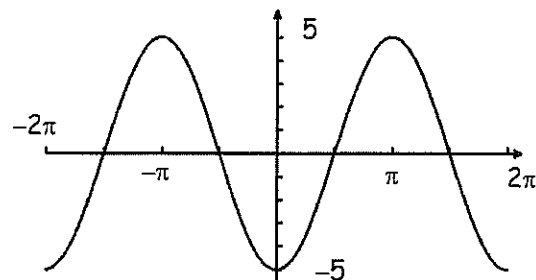
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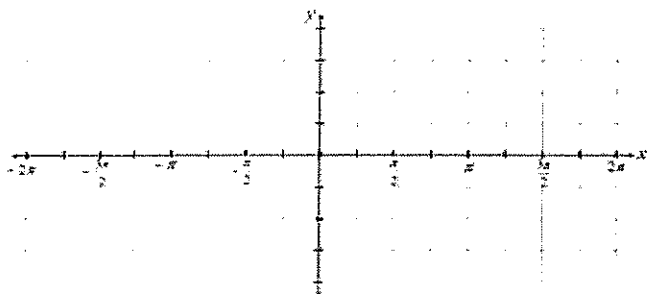


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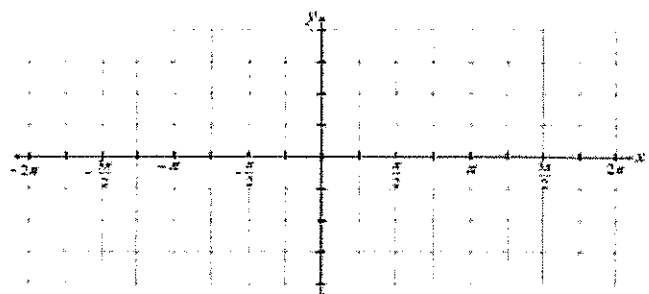


Sketch the graph of the function over the interval $-2\pi \leq x \leq 2\pi$.

11. $y = 4 \sin x$

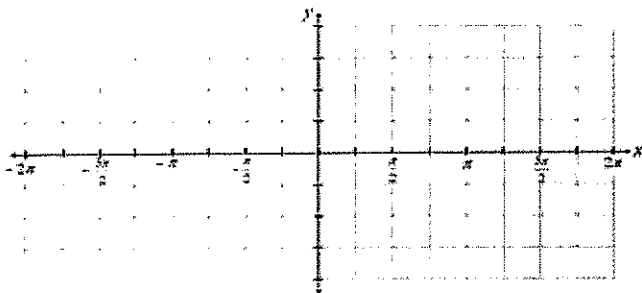


12. $y = 2 \cos x$

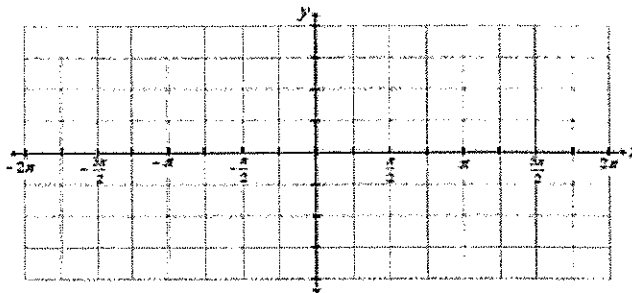


4.5 Homework WS

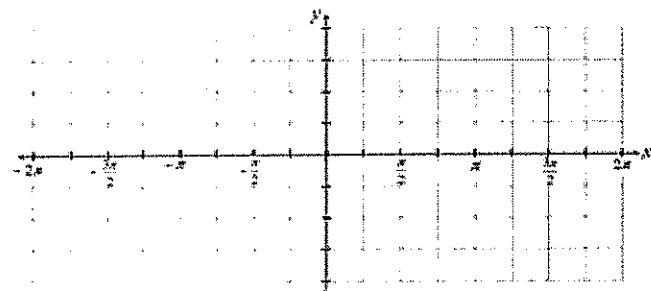
13. $y = 2 \sin 2x$



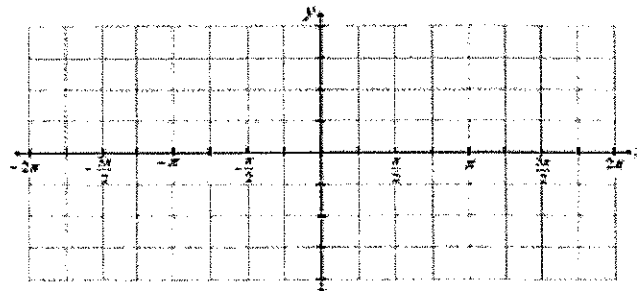
14. $y = -\cos 2x$



15. $y = 3 \cos \frac{1}{2}x$



16. $y = -2 \sin(4x)$



Determine the amplitude, period, phase shift, and vertical shift for each.

17. $y = 2 + 3 \sin\left(4x + \frac{\pi}{2}\right)$

18. $y = 2 \cos(x - \pi)$

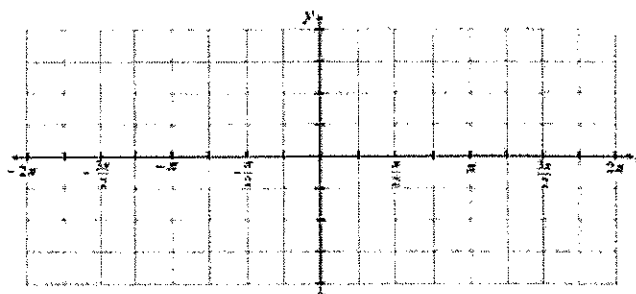
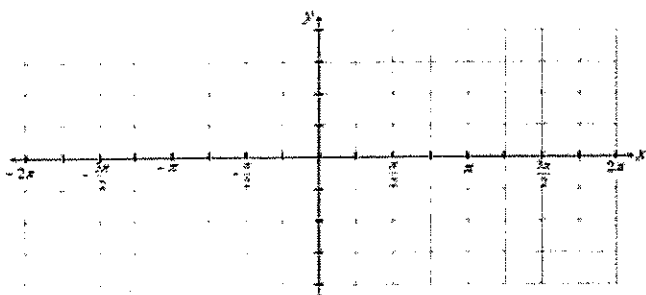
19. $y = \frac{1}{2} \cos 2x - 4$

20. $y = 3 + 4 \sin(x - \pi)$

Sketch the graph of each function for **ONE PERIOD**.

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

22. $y = 2 \cos(x + \pi) - 2$



WS #2

Name _____

Hour _____

Date _____

Find the period and amplitude of each function. Then sketch a complete cycle of the graph starting from 0.

1. $y = -\sin x$

Amplitude = _____

Period = _____

2. $y = -3 \cos x$

Amplitude = _____

Period = _____

3. $y = \sin 2\theta$

Amplitude = _____

Period = _____

4. $y = 2\sin \frac{\theta}{2}$

Amplitude = _____

Period = _____

5. $y = 3 \cos 4\theta$

Amplitude = _____

Period = _____

6. $y = -\frac{3}{2} \cos \frac{1}{4}x$

Amplitude = _____

Period = _____

7. $y = -.5 \sin \theta$

Amplitude = _____

Period = _____

8. $y = \cos \frac{x}{2}$

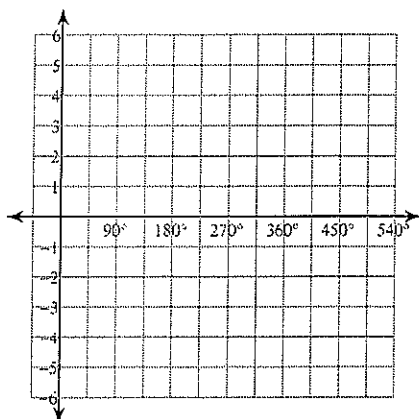
Amplitude = _____

Period = _____

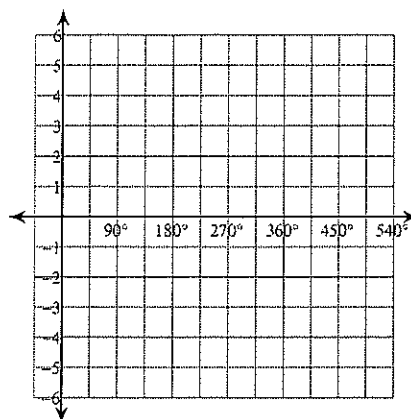
Translating Graphs of Trig Functions

Using degrees, find the amplitude and period of each function. Then graph.

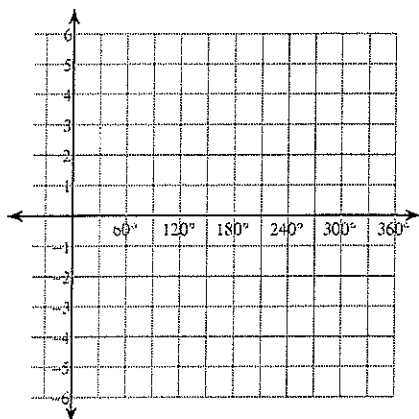
1) $y = \sin(\theta - 135)$



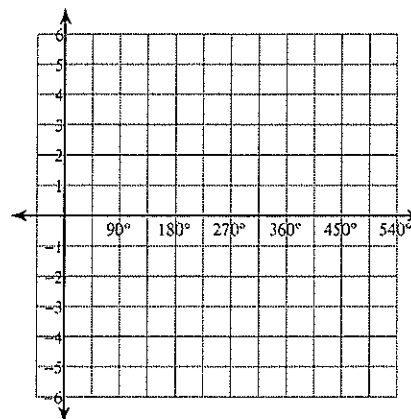
2) $y = \cos(\theta - 30)$



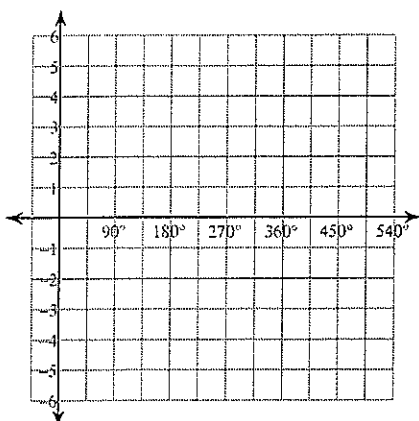
3) $y = -2 + \tan \theta$



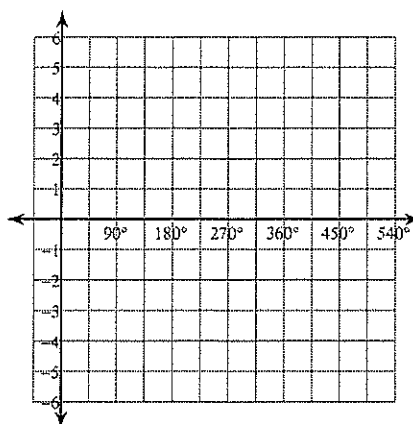
4) $y = 1 + \sin \theta$



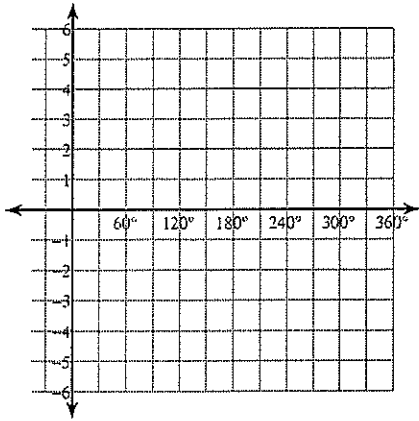
5) $y = 2 + \frac{1}{2} \csc(\theta - 135)$



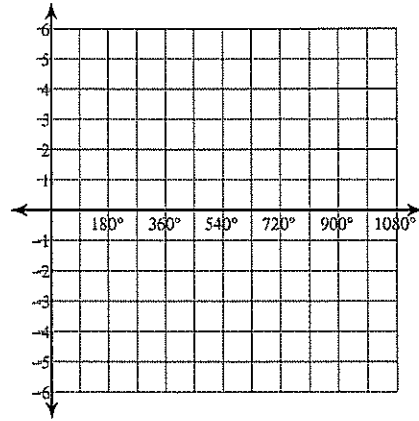
6) $y = 2 + 4\cos(\theta + 90)$



7) $y = 1 + \cot(2\theta - 90)$

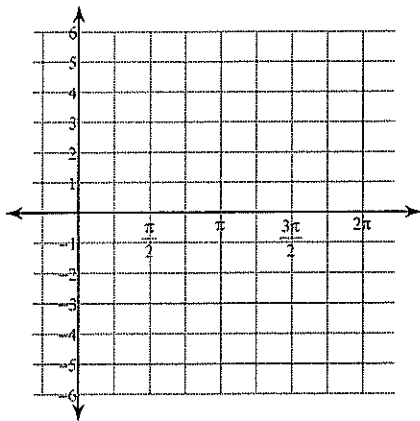


8) $y = 1 + \sec\left(\frac{\theta}{2} - 135\right)$

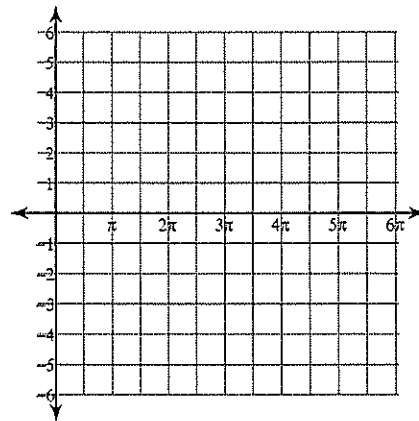


Using radians, find the amplitude and period of each function. Then graph.

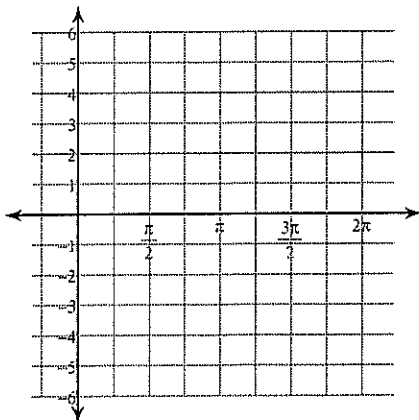
9) $y = \frac{1}{2} \sin\left(3\theta + \frac{\pi}{4}\right) + 1$



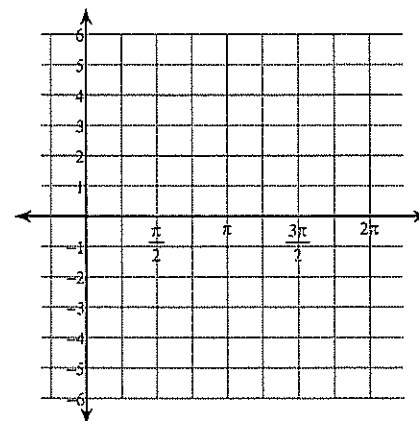
10) $y = 3 \sec\left(\frac{\theta}{2} - \frac{5\pi}{6}\right) - 2$



11) $y = 4 \cos\left(2\theta - \frac{5\pi}{6}\right) - 2$



12) $y = \frac{1}{2} \tan\left(2\theta - \frac{5\pi}{3}\right) + 1$

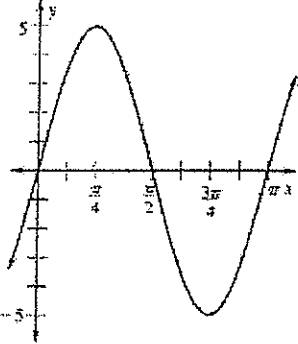
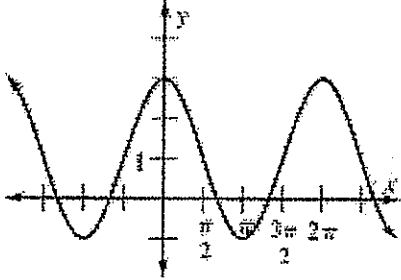


Precalculus Homework

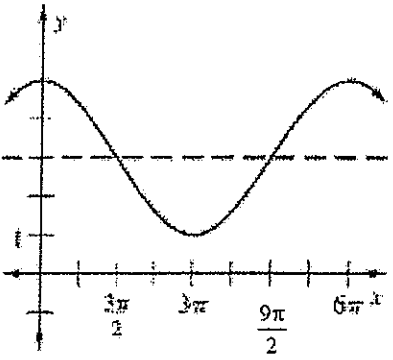
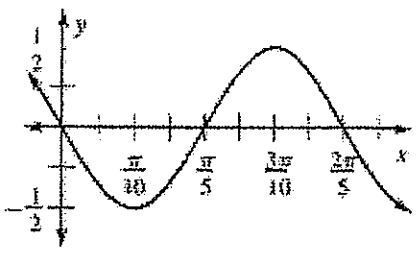
Name _____

4.5 Worksheet #2-Writing Equations of Sine and Cosine Functions

Examine the graph below and determine the amplitude, period, phase shift, and vertical shift of each using COSINE as the parent function. Then write an equation of the function.

<p>1.</p>  <p>Amplitude: _____</p> <p>Period: _____</p> <p>Phase Shift: _____</p> <p>Vertical Shift: _____</p> <p>Function: _____</p>	<p>2.</p>  <p>Amplitude: _____</p> <p>Period: _____</p> <p>Phase Shift: _____</p> <p>Vertical Shift: _____</p> <p>Function: _____</p>
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Examine the graph below and determine the amplitude, period, phase shift, and vertical shift of each using SINE as the parent function. Then write an equation of the function.

<p>3.</p>  <p>Amplitude: _____</p> <p>Period: _____</p> <p>Phase Shift: _____</p> <p>Vertical Shift: _____</p> <p>Function: _____</p>	<p>4.</p>  <p>Amplitude: _____</p> <p>Period: _____</p> <p>Phase Shift: _____</p> <p>Vertical Shift: _____</p> <p>Function: _____</p>
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Identify the amplitude, period, phase shift and vertical shift of the following trig functions.

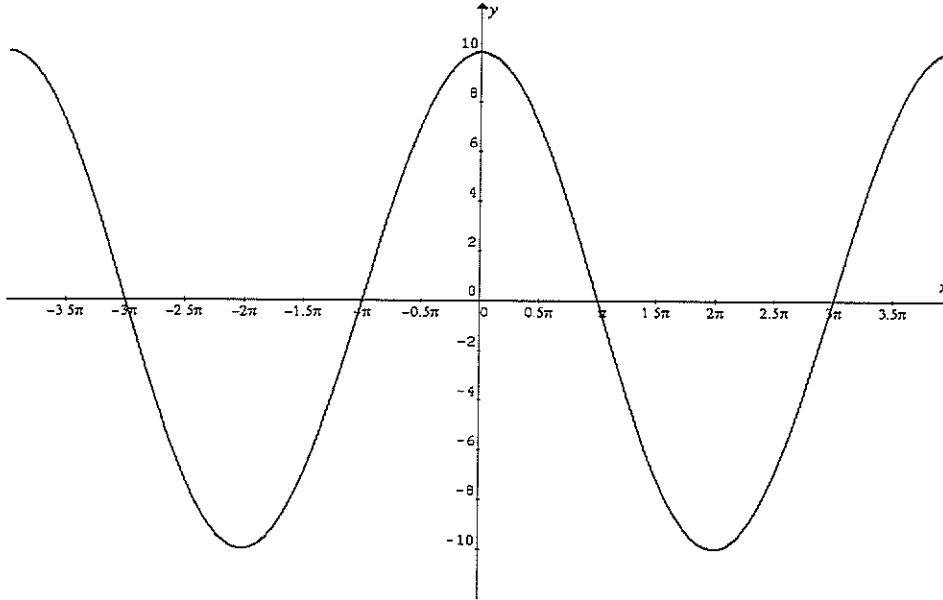
<p>5. $y = -10 \cos\left(\frac{x}{6}\right)$</p> <p>Amplitude: _____</p> <p>Period: _____</p> <p>Phase Shift: _____</p> <p>Vertical Shift: _____</p>	<p>6. $y = 5 - 2 \sin\left(\frac{2x}{3}\right)$</p> <p>Amplitude: _____</p> <p>Period: _____</p> <p>Phase Shift: _____</p> <p>Vertical Shift: _____</p>
<p>7. $y = 3 \cos(6x + \pi)$</p> <p>Amplitude: _____</p> <p>Period: _____</p> <p>Phase Shift: _____</p> <p>Vertical Shift: _____</p>	<p>8. $y = -4 \sin\left(\frac{2}{3}x - \frac{\pi}{3}\right)$</p> <p>Amplitude: _____</p> <p>Period: _____</p> <p>Phase Shift: _____</p> <p>Vertical Shift: _____</p>

Given the following information about each trig function, write a possible equation for each.

<p>9. Sine Function</p> <p>amplitude = $\frac{1}{2}$</p> <p>period = $\frac{\pi}{3}$</p> <p>vertical shift = -4</p>	<p>10. Sine Function</p> <p>amplitude = 7</p> <p>period = 4π</p> <p>phase shift = $-\frac{\pi}{3}$</p>
<p>11. Cosine Function</p> <p>amplitude = 1</p> <p>period = 2π</p> <p>phase shift = $\frac{5\pi}{6}$</p> <p>vertical shift = 3</p>	<p>12. Cosine Function</p> <p>amplitude = 3</p> <p>period = π</p> <p>phase shift = $-\pi$</p> <p>vertical shift = -1.5</p>

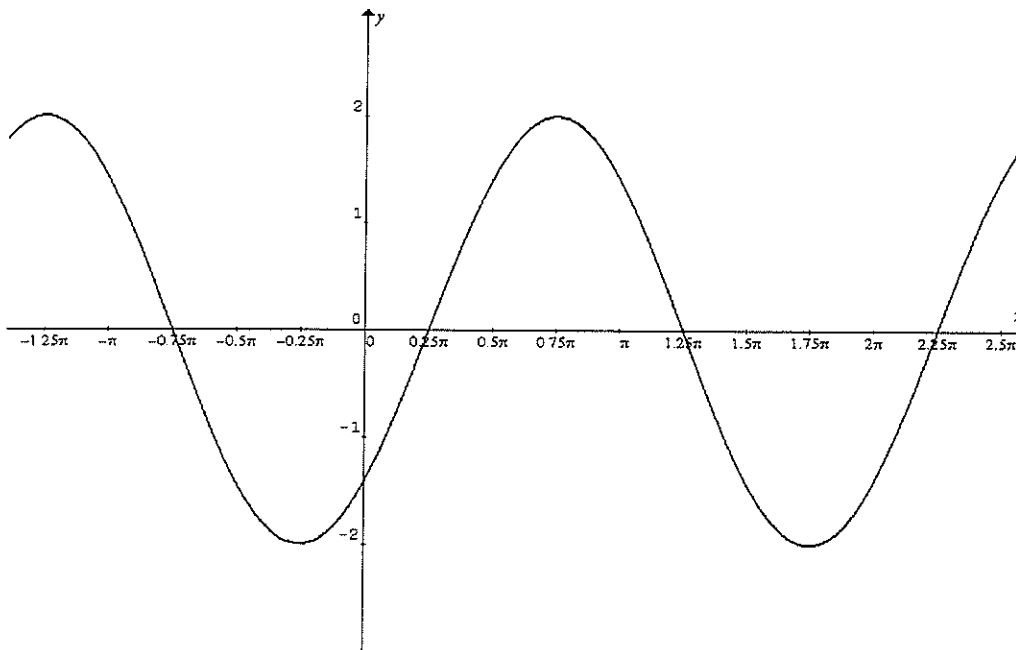
Trig Graphs Worksheet

State the equations for the following graphs.



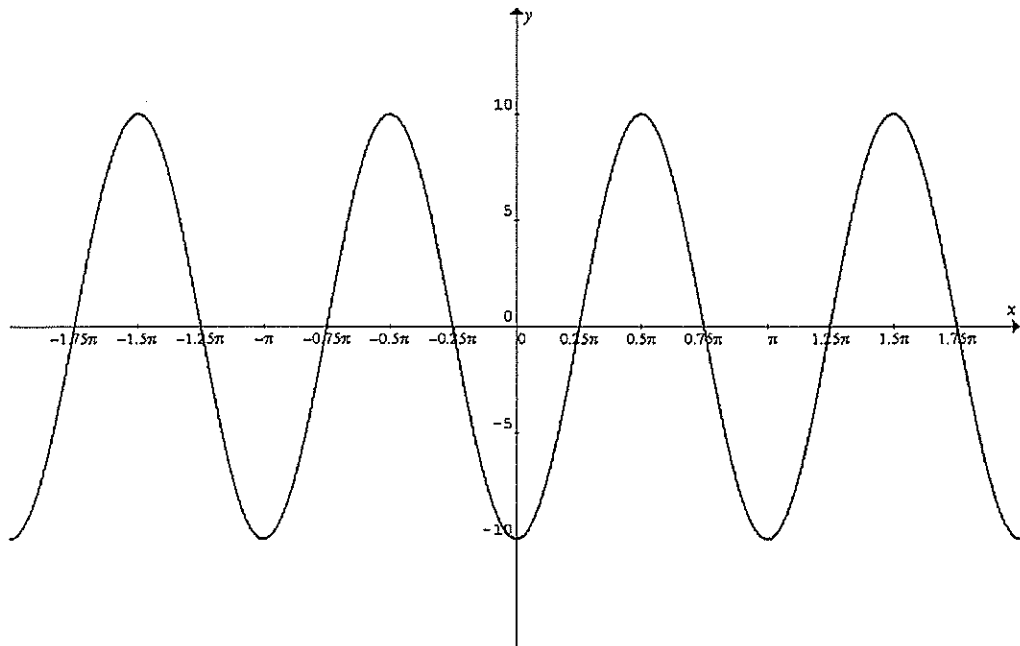
Amplitude = _____ Period = _____ Phase Shift = _____

Equation (1) = _____ (in terms of the **cosine** function)



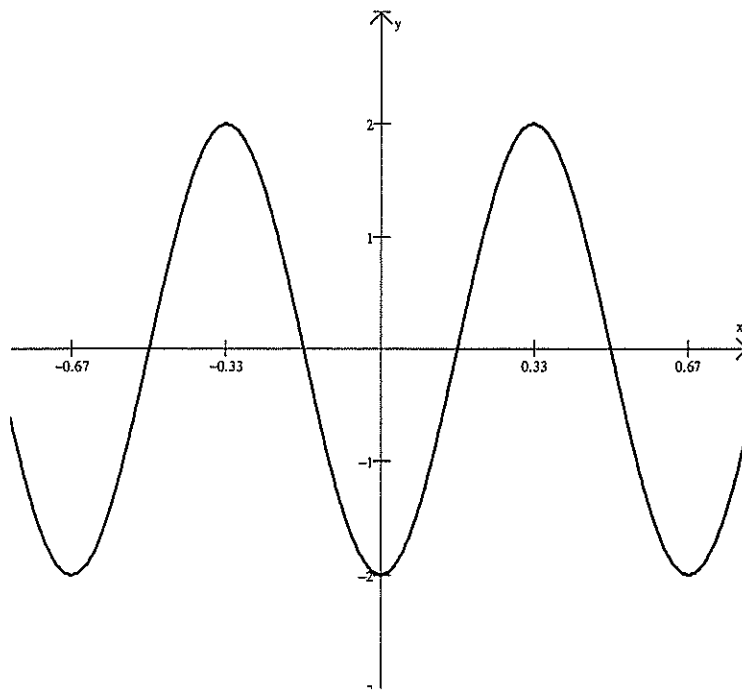
Amplitude = _____ Period = _____ Phase Shift = _____

Equation (2) = _____ (in terms of the **sine** function)



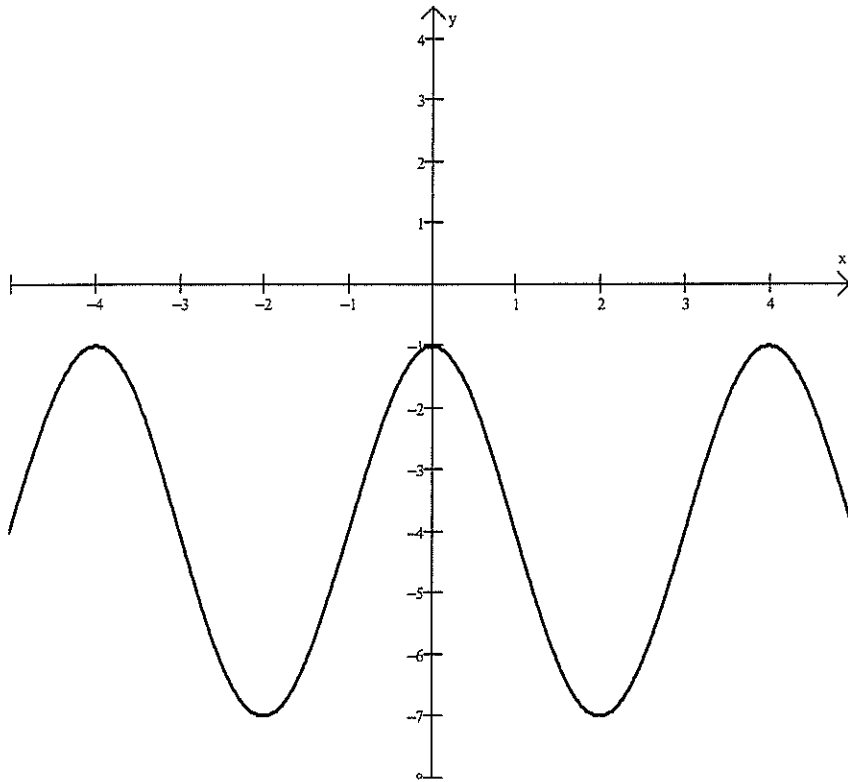
Amplitude = _____ Period = _____ Phase Shift = _____

Equation (3) = _____ (in terms of the **sine** function)



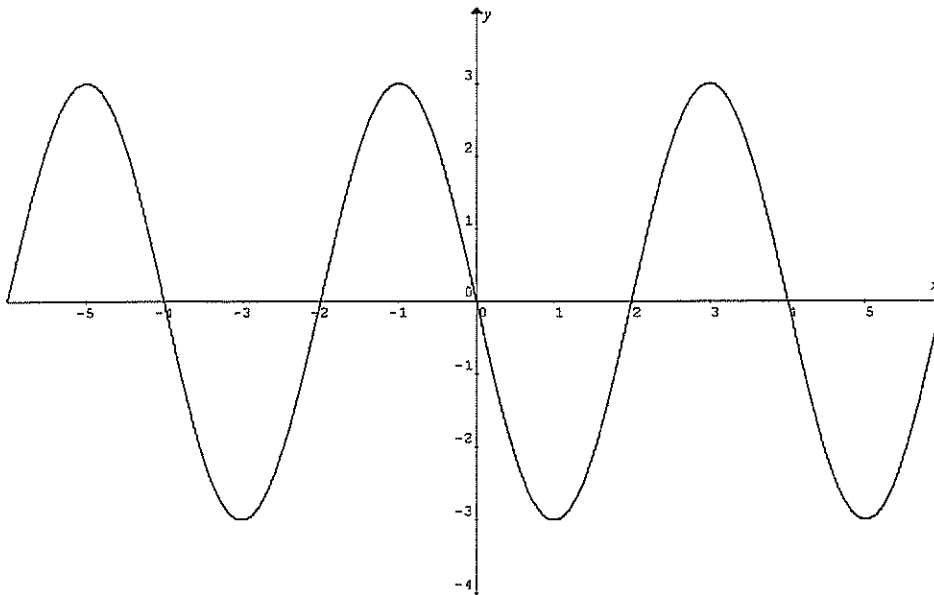
Amplitude = _____ Period = _____ Phase Shift = _____

Equation (4) = _____ (in terms of the **cosine** function)



Amplitude = _____ Period = _____ Phase Shift = _____

Equation (5) = _____ (in terms of the **cosine** function)



Amplitude = _____ Period = _____ Phase Shift = _____

Equation (6) = _____ (in terms of the **sine** function)

Graph one complete period of the given sine or cosine curve. (Check your answer with your graphing calculator!)

$$f(x) = -2 + \sin x$$

Amplitude = _____

Period = _____

Phase Shift = _____



$$f(x) = 2 \sin\left(\frac{2}{3}x - \frac{\pi}{6}\right)$$

Amplitude = _____

Period = _____

Phase Shift = _____



$$f(x) = 5 \sin\left(2\pi x + \frac{\pi}{2}\right)$$

Amplitude = _____

Period = _____

Phase Shift = _____



$$f(x) = \frac{1}{10} \cos 2\left(x + \frac{\pi}{4}\right)$$

Amplitude = _____

Period = _____

Phase Shift = _____

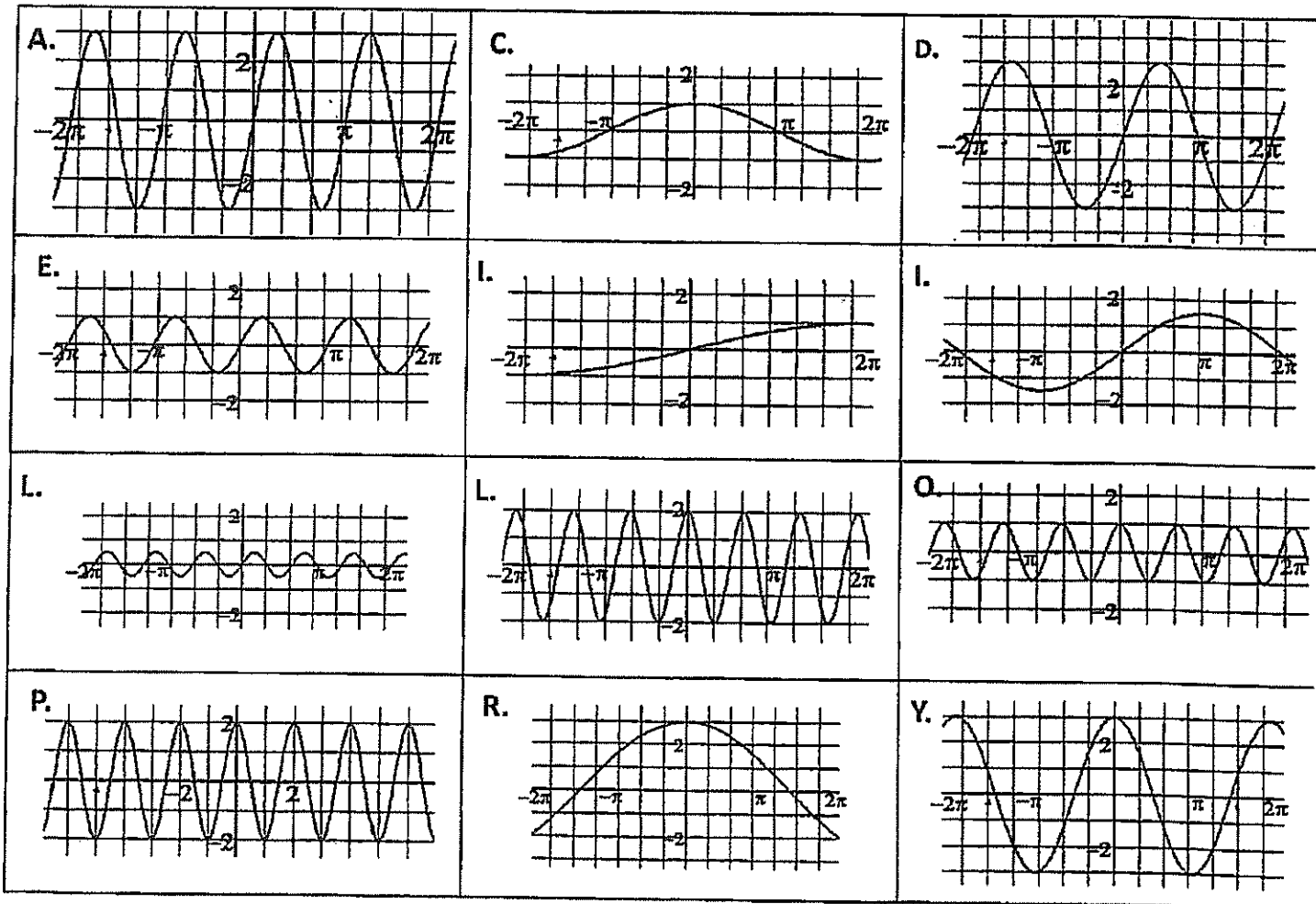


HOW OFTEN DID THE STUDENT WHO GOT "C" ON HIS TRIG FUNCTIONS TEST DO HIS HOMEWORK?

Match each function from above with the graph below.

Write the amplitude, # of cycles in 2π , period and the equation next to each graph.

1) $f(x) = 3 \sin x$	2) $f(x) = \sin(2x)$	3) $f(x) = \sin \frac{x}{4}$	4) $f(x) = \cos \left(\frac{1}{2} x \right)$
5) $f(x) = \cos(3x)$	6) $f(x) = \frac{1}{2} \sin(3x)$	9) $f(x) = \frac{3}{2} \sin \left(\frac{1}{2} x \right)$	10) $f(x) = 3 \cos x$
7) $f(x) = 3 \sin(2x)$	8) $f(x) = 2 \cos \pi x$	11) $f(x) = 3 \cos \frac{2}{3} x$	12) $f(x) = 2 \cos(3x)$



8	2	11	3	5	1	7	4	9	12	6	10

Pre-Calculus
 1.5 Graphs of Sine and Cosine Functions
 Assignment #44

Name _____

Period _____ Group # _____

Determine the amplitude and period of each function.

1. $y = \sin 4x$

Amplitude = _____

Period = _____

2. $y = \cos 5x$

Amplitude = _____

Period = _____

3. $y = \sin x$

Amplitude = _____

Period = _____

4. $y = 4 \cos x$

Amplitude = _____

Period = _____

5. $y = -2 \sin x$

Amplitude = _____

Period = _____

6. $y = 2 \sin(-4x)$

Amplitude = _____

Period = _____

7. $y = 3 \sin \frac{2}{3}x$

Amplitude = _____

Period = _____

8. $y = -4 \cos 5x$

Amplitude = _____

Period = _____

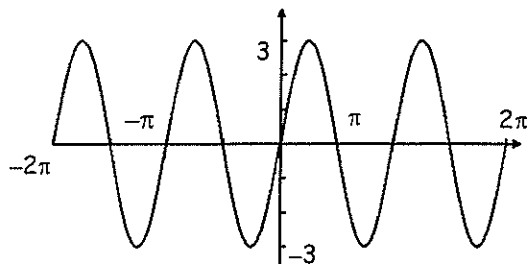
9. $y = 3 \cos(-2x)$

Amplitude = _____

Period = _____

Give the amplitude and period of each function graphed below. Then write an equation of each graph.

10.

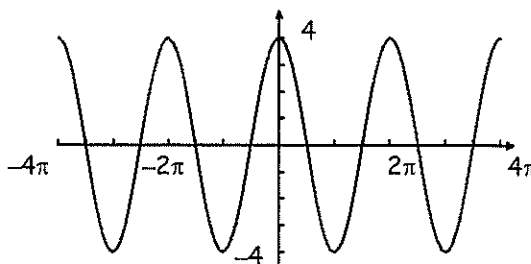


Amplitude = _____

Period = _____

Equation: _____

11.

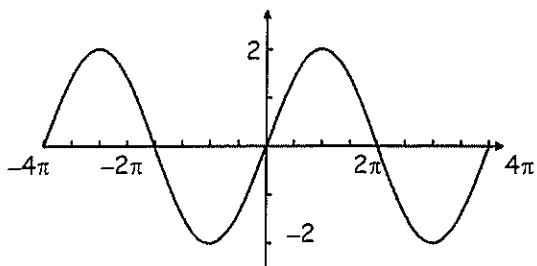


Amplitude = _____

Period = _____

Equation: _____

12.

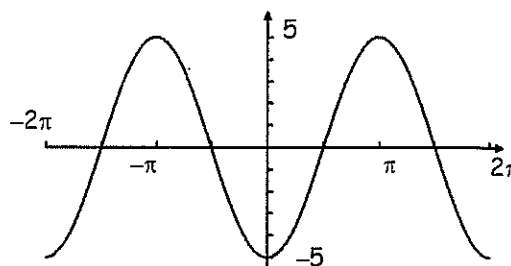


Amplitude = _____

Period = _____

Equation: _____

13.



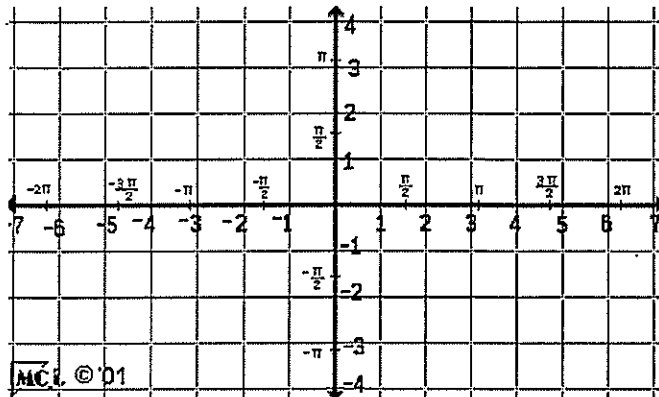
Amplitude = _____

Period = _____

Equation: _____

Give the amplitude and period of each function. Then sketch the graph of the function over the interval $-2\pi \leq x \leq 2\pi$ using the key points for each function.

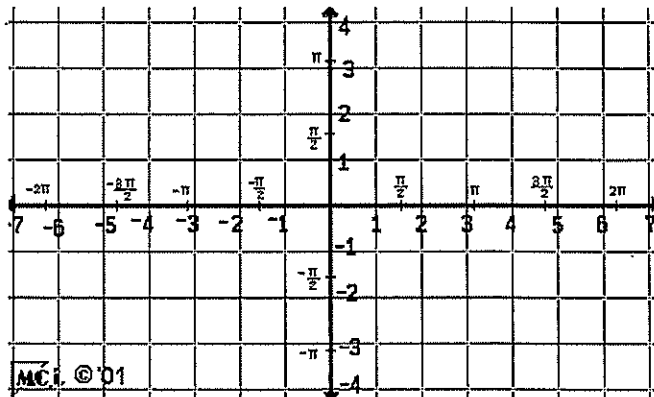
14. $y = 3 \sin x$



Amplitude = _____

Period = _____

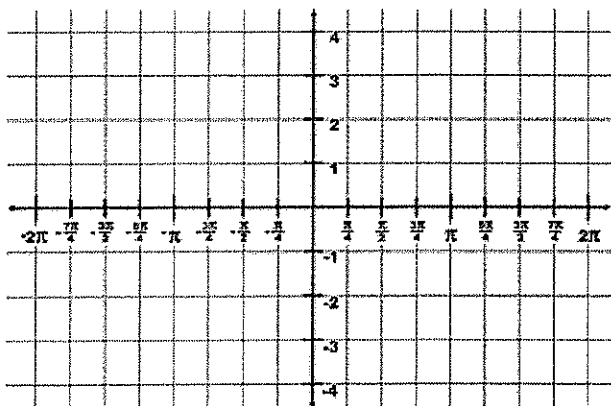
15. $y = 2 \cos x$



Amplitude = _____

Period = _____

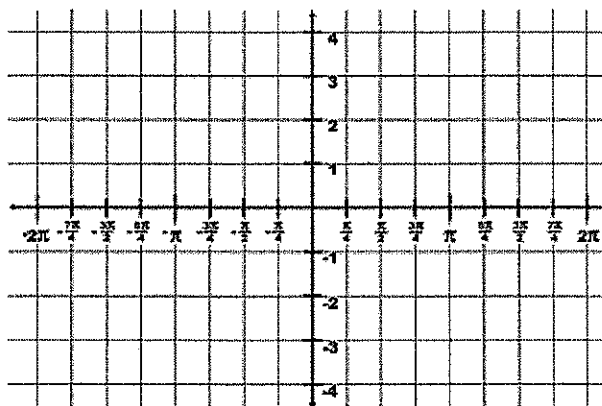
16. $y = 3 \sin 2x$



Amplitude = _____

Period = _____

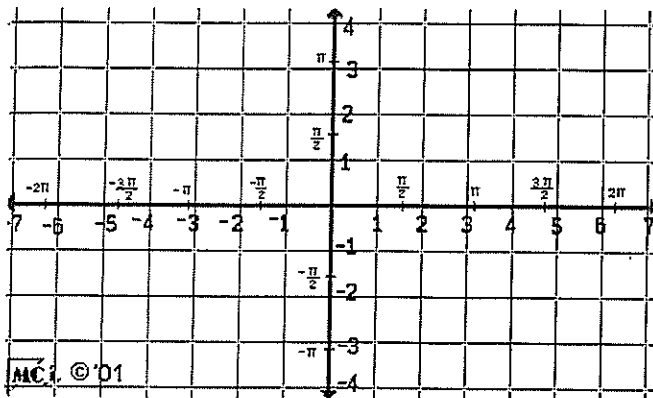
17. $y = 4 \cos 2x$



Amplitude = _____

Period = _____

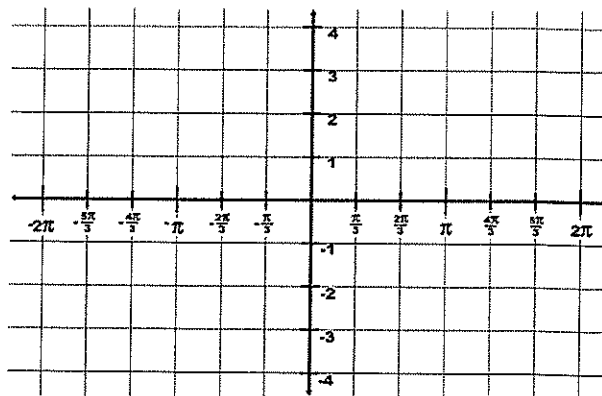
18. $y = 3 \cos \frac{1}{2} x$



Amplitude = _____

Period = _____

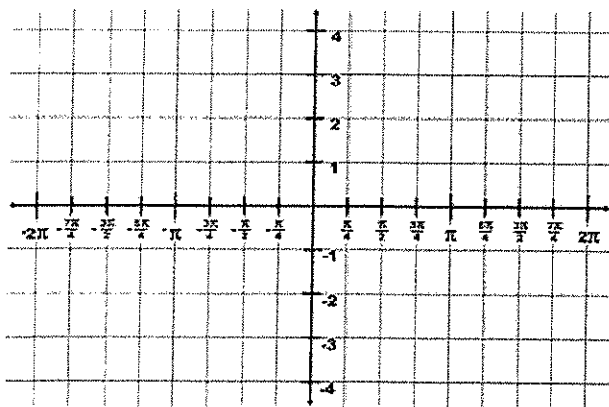
19. $y = \cos(-3x)$



Amplitude = _____

Period = _____

20. $y = -2 \sin(-2x)$



Amplitude = _____

Period = _____

21. Find an equation for a sine function that has amplitude of 4, a period of π .

22. Find an equation for a cosine function that has an amplitude of $\frac{3}{5}$, a period of $\frac{3}{2} \pi$.

23. Find an equation for a sine function that has amplitude of 5, a period of 3π .

