

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 = \_\_\_\_\_

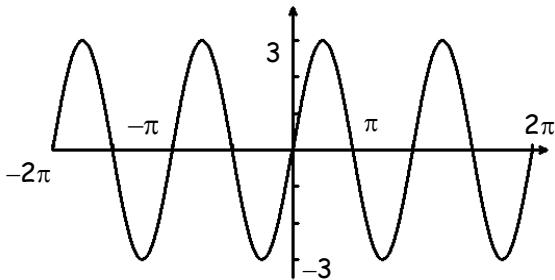
7.  $y = 3 \sin \frac{2}{3}x$   
 Amplitude = \_\_\_\_\_  
 Period = \_\_\_\_\_

8.  $y = -4 \cos 5x$   
 Amplitude = \_\_\_\_\_  
 Period = \_\_\_\_\_

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

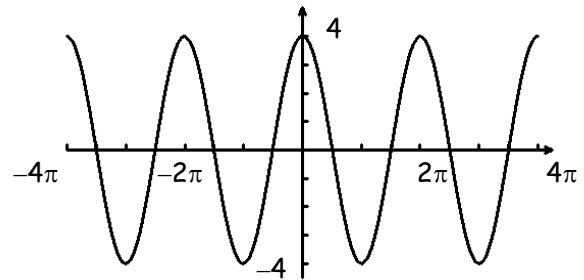
Give the amplitude and period of each function graphed below. Then write an equation of each graph.

10.



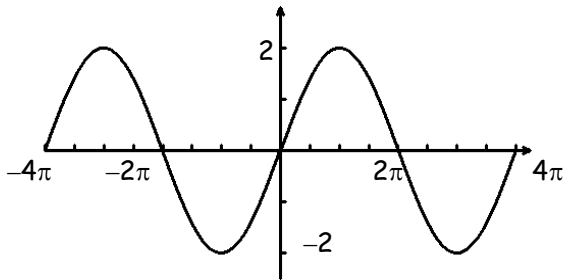
Amplitude = \_\_\_\_\_  
 Period = \_\_\_\_\_  
 Equation: \_\_\_\_\_

11.



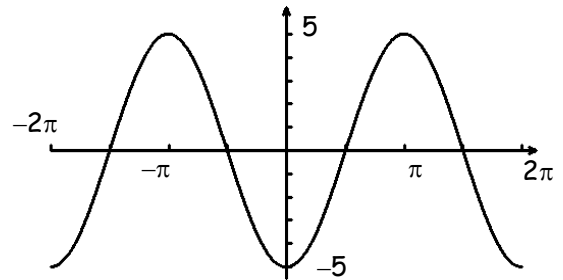
Amplitude = \_\_\_\_\_  
 Period = \_\_\_\_\_  
 Equation: \_\_\_\_\_

12.



Amplitude = \_\_\_\_\_  
 Period = \_\_\_\_\_  
 Equation: \_\_\_\_\_

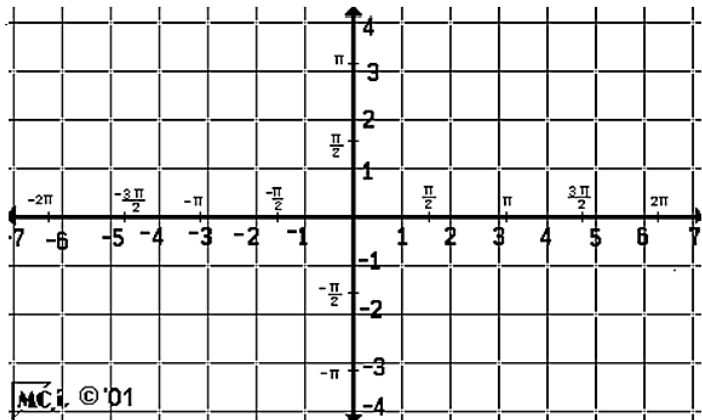
13.



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.

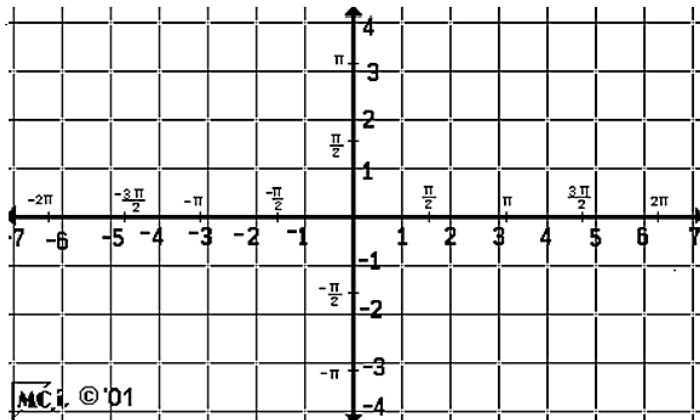
14.  $y = 3 \sin x$



Amplitude = \_\_\_\_\_

Period = \_\_\_\_\_

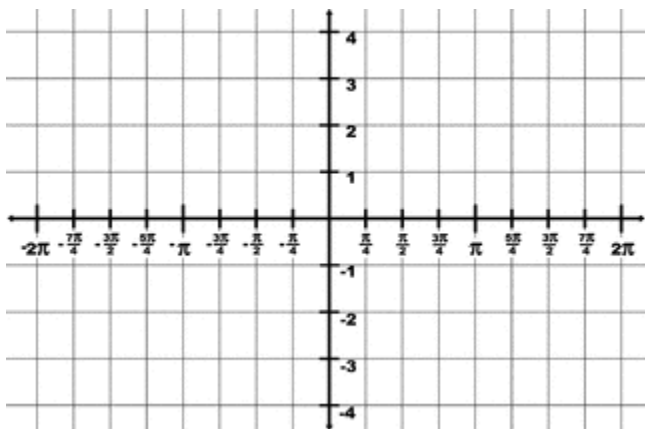
15.  $y = 2 \cos x$



Amplitude= \_\_\_\_\_

Period= \_\_\_\_\_

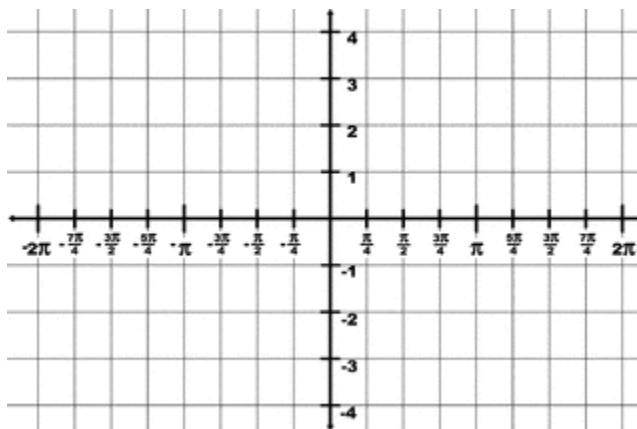
16.  $y = 3 \sin 2x$



Amplitude = \_\_\_\_\_

Period = \_\_\_\_\_

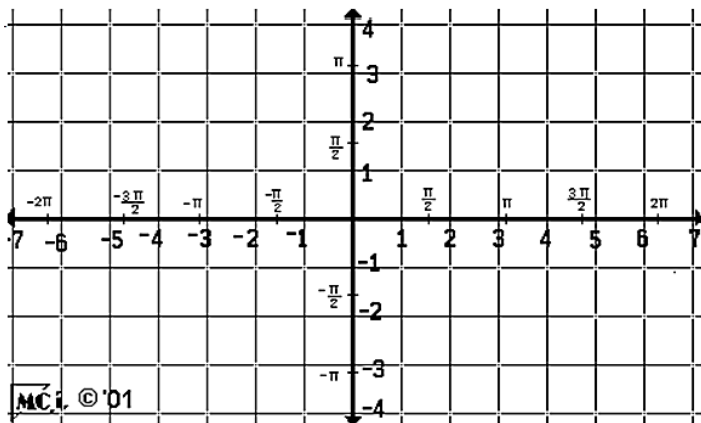
17.  $y = 4 \cos 2x$



Amplitude= \_\_\_\_\_

Period= \_\_\_\_\_

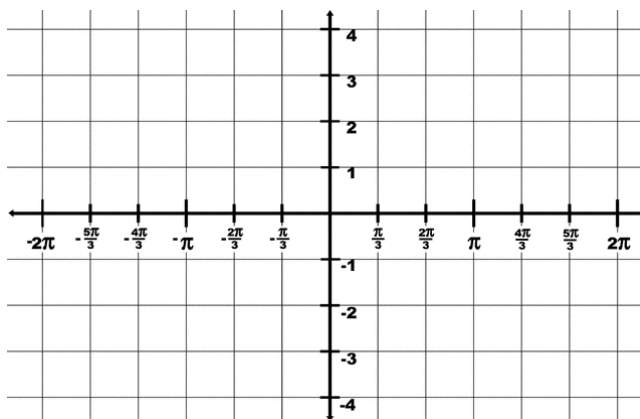
18.  $y = 3 \cos \frac{1}{2} x$



Amplitude = \_\_\_\_\_

Period = \_\_\_\_\_

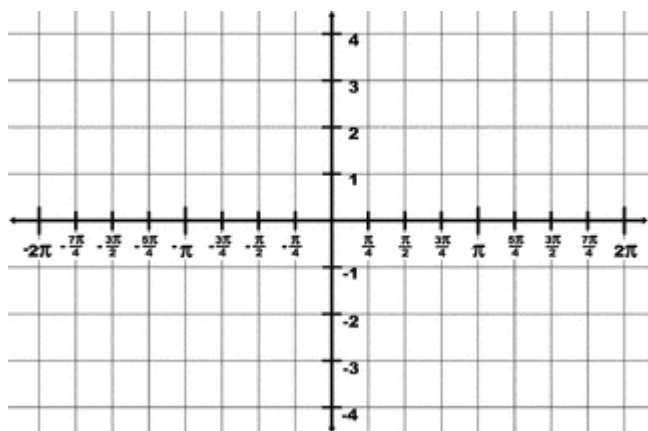
19.  $y = \cos(-3x)$



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  $\pi$ .

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  $3\pi$ .

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

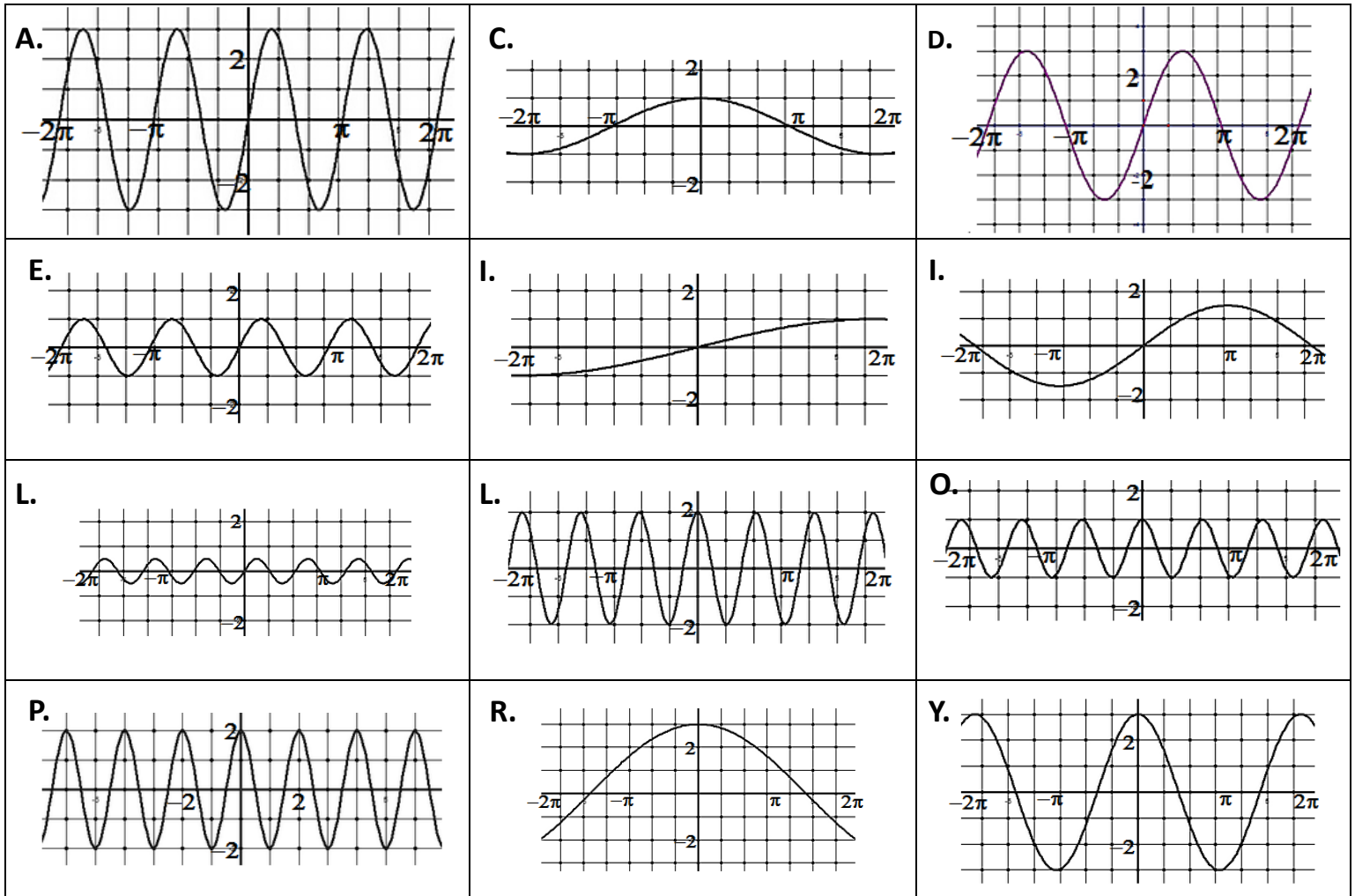
$$f(x) = A\sin(Bx) \quad f(x) = A\cos(Bx)$$

$|A|$  = Amplitude

B represents the number of complete waves in an interval of  $2\pi$ , therefore  $\frac{2\pi}{B}$  = Period

|                       |                                 |  |   |
|-----------------------|---------------------------------|--|---|
| 1) $f(x) = 2\sin x$   | 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) $f(x) = 4\cos(\pi x)$                 |
| 7) $f(x) = 3\sin(2x)$ | 8) $f(x) = 4\sin x$             | 11) $f(x) = 3\sin\frac{x}{3}$                        | 12) $f(x) = 2\cos(3x)$                    |

Match each function from above with a graph below.



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