

TRIGONOMETRY JOURNAL GRAPHING TRIG FUNCTIONS

1. Trig functions are called periodic functions because _____
_____.
2. (a) The amplitude of a wave is the distance from the _____ to _____
while the period is the length of _____ of the wave.
(b) The trig functions _____ have amplitude while the trig functions
_____ do NOT have amplitude because _____
_____.
3. (a) The normal period of $\sin x$, $\cos x$, $\sec x$, & $\csc x$ is _____ while the normal period of $\tan x$ and
 $\cot x$ is _____.
4. (a) The graph of cosine starts _____ and moves in a(n) _____ direction.
(b) The graph of sine starts _____ and moves in a(n) _____ direction.
5. (a) A $-a$ causes the graph of sine to _____.
(b) A $-a$ causes the graph of cosine to _____.
(c) A $-a$ causes the graph of tangent to _____.
6. Phase shift is the same as a _____ shift.
7. List the steps for finding the 5 major points on the x -axis which are used to plot all of the trig
functions except tangent. Assume you have already determined the phase shift and period of the graph.
1. _____ 2. _____
8. What is different about how you find those 5 points for tangent? _____

9. When a phase shift is present, the graph of cotangent shifts its _____
while the graph of tangent shifts its _____.
10. a) Add a number to the equation of $f(x) = \sin x$ to make the waves occur rapidly. _____
b) Add a number to the equation of $f(x) = \cos x$ to make the waves longer. _____
11. (a) Assume that you have determined that $b = 3$, give two examples of how the equation $y = \cos\left(x - \frac{\pi}{6}\right)$
can correctly be written. _____
(b) Given the **graph** of a trig function, the value of b is found by first determining the _____ of
the graph and then calculating $b =$ _____ for $\sin x$, $\cos x$, $\sec x$, & $\csc x$ or
 $b =$ _____ for $\tan x$ & $\cot x$.
12. Two real world applications of the graphs of trig functions are _____
_____.

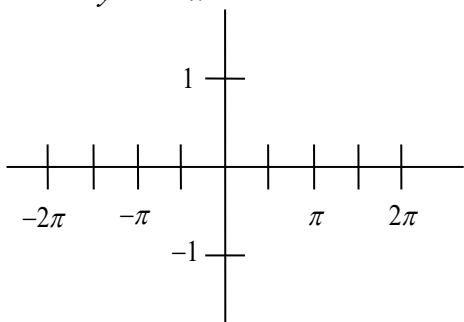
13. List the following formulas and operations.

a) Show how to identify each of the following using the equation $y = a \text{ ______ } (bx + c) + d$ where the blank is filled in by one of the trig functions at the top of the chart.

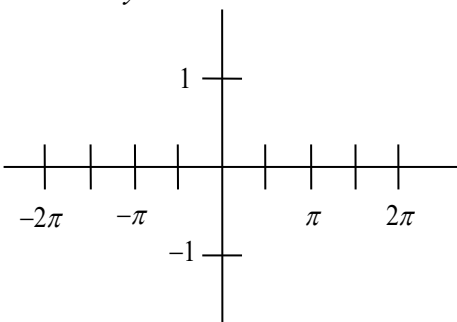
	sin or cos	sec or csc	tan or cot
Amplitude			
Period			
Phase Shift			
Vertical Shift			

b) Sketch **two periods** of the graph of each of the 6 trig functions.

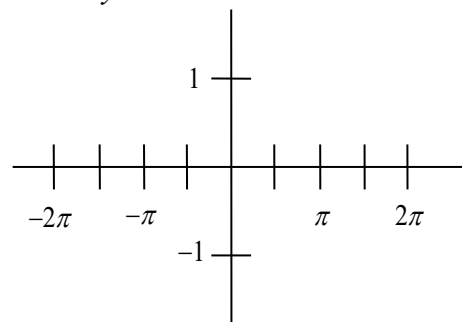
$y = \sin x$



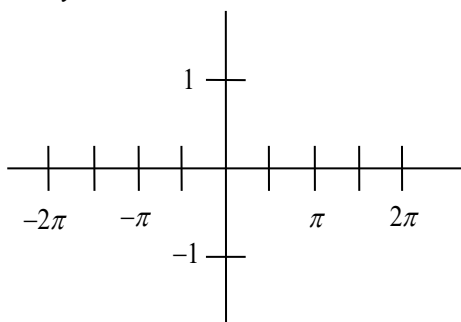
$y = \cos x$



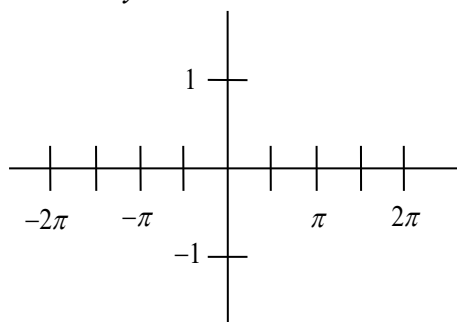
$y = \csc x$



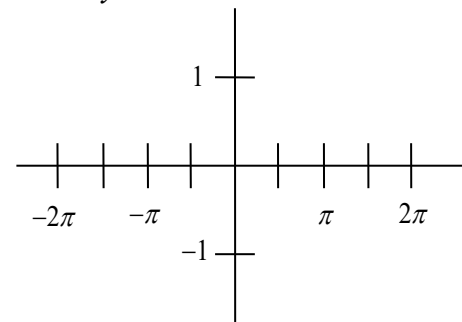
$y = \sec x$



$y = \tan x$



$y = \cot x$



14. Given the graph of $y = 2 \sin \frac{2}{3} \left(x + \frac{5\pi}{4} \right) - 1$ below, write 3 additional equations that would result in the same graph. You may consider it to be a graph of $\sin x$ or $\cos x$.

1) _____

2) _____

3) _____