Name_____

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 sine starts _____ and moves in a(n) _____ direction.

   (b) The graph of cosine starts _____ and moves in a(n) _____ direction.

5. (a) A $-a$ causes the graph of cosine to _____ .

   (b) A $-a$ causes the graph of tangent to _____ .

   (c) A $-a$ causes the graph of sine to _____ .

6. Horizontal shift is called _____ shift when working with waves.

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 tangent shifts its _____

   while the graph of cotangent shifts its _____ .

10. a) Add a number to the equation of $f(x) = \sin x$ to make the waves longer. _____

    b) Add a number to the equation of $f(x) = \cos x$ to make the waves occur rapidly._____

11. (a) Assume that you have determined that $b = \frac{1}{2}$, give two examples of how the equation $y = \tan\left(x + \frac{\pi}{4}\right)$

    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 $b = \dfrac{1}{}$ for sin x, cos x, sec x, & csc x or

    $b = \dfrac{1}{}$ for tan x & cot x.

12. Two real world applications of the graphs of trig functions are _____

    _____ .
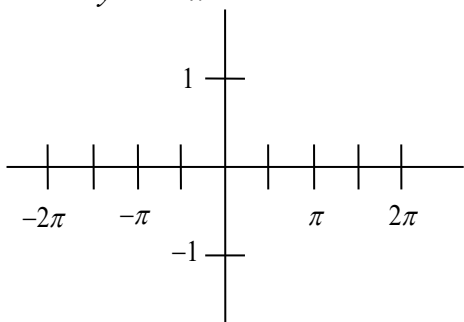
13. List the following formulas and operations.

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

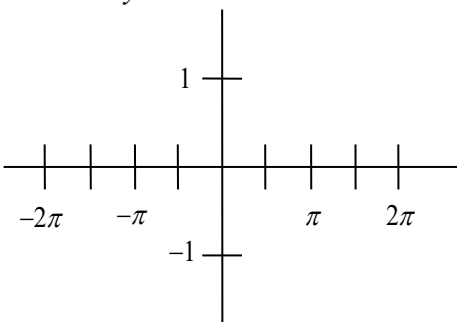|	sin or cos	sec or csc	tan or cot
Amplitude			
Period			
Phase Shift			
Vertical Shift			

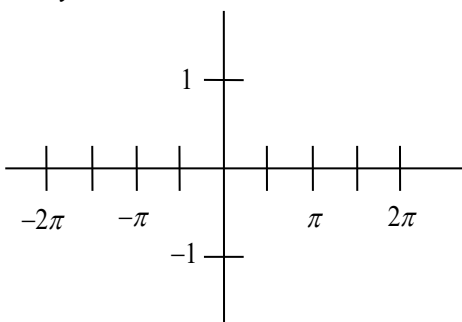b) Sketch **two periods** of the graph of each of the 6 trig functions.
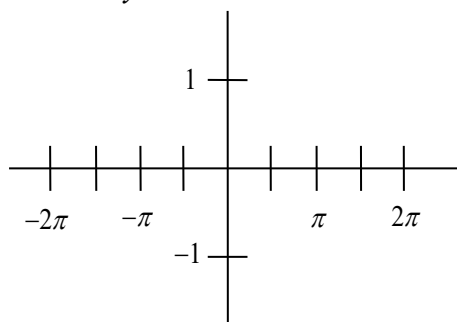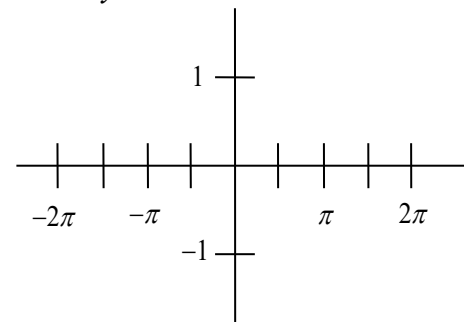
$y = \sin x$
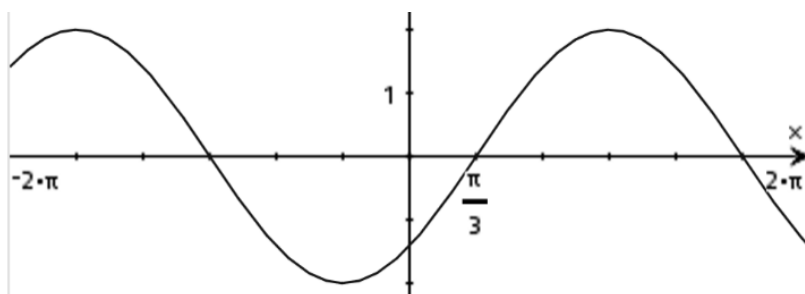

$y = \cos x$

$y = \csc x$
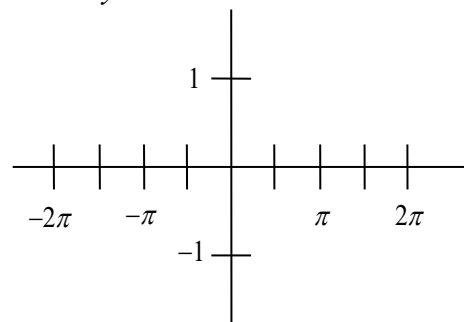
$y = \sec x$

$y = \tan x$

$y = \cot x$

14. Given the graph of $y = 2\sin\frac{3}{4}\left(x - \frac{\pi}{3}\right)$ 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)_____