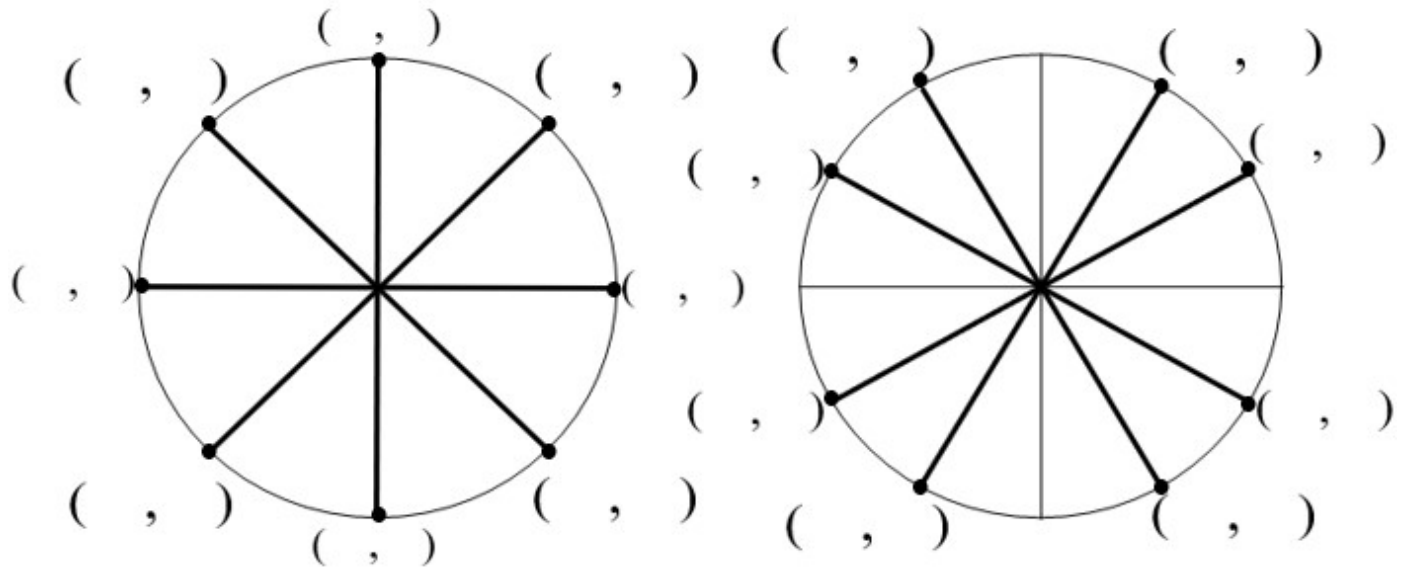


**Chapter 5 Review (Part 2)**  
**NO CALCULATOR!!!!**

NAME:

PER:

**28. QUIZ YOURSELF!** Without referring to other handouts or notes, label all radian values AND coordinates of each highlighted terminal point. After they are complete, check your work using one of your previous unit circle handouts.



**29. Define each function in terms of x and y (based on the unit circle with  $r = 1$ .)**

$\sin \theta =$        $\cos \theta =$        $\tan \theta =$        $\csc \theta =$        $\sec \theta =$        $\cot \theta =$

**30. Principal Values:** To find a unique solution for  $\sin x$  and  $\tan x$ , refer only to Quadrant  $\_\_\_$  or  $\_\_\_$ .

To find a unique solution for  $\cos x$ , refer only to Quadrant  $\_\_\_$  or  $\_\_\_$ .

**Evaluate using the unit circle and principal values.** ( $\text{Arcsin} \frac{1}{2} \rightarrow \text{same as } \text{Sin}^{-1} \frac{1}{2} \rightarrow \text{same as } \text{Sin} \theta = \frac{1}{2}$ )

31.  $\text{Arccos}(-1)$

32.  $\text{Arctan}(1)$

33.  $\text{Sin}^{-1}\left(-\frac{\sqrt{3}}{2}\right)$

34.  $\cos(5\pi)$

35.  $\sin \frac{4\pi}{3}$

36.  $\cot\left(\frac{\pi}{6}\right)$

37.  $\sec(4\pi)$

38.  $\text{Arccos}(\sin \frac{\pi}{3})$  *Show both steps!*

39.  $\cos[\text{Arctan}(-1)]$

40.  $\tan(\text{Sin}^{-1}(1) - \text{Cos}^{-1} \frac{1}{2})$

**CHECK ANSWERS #29-44**

$y = \cot 2\left(x + \frac{\pi}{4}\right) + 1$	I	I	II	IV	-1	1	
$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\pi$	$\frac{5\pi}{3}$	$\frac{\pi}{k}$	$\frac{2\pi}{k}$	$\frac{2\pi}{k}$	$\sqrt{3}$
$-\frac{\sqrt{3}}{2}$	$\frac{\sqrt{3}}{3}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{x}$	$\frac{1}{y}$	$\frac{y}{x}$	$\frac{x}{y}$	x y
$y = \frac{2}{3} \cos 6\left(x + \frac{\pi}{3}\right) + 5$		$y = \tan \frac{1}{4}\left(x - \frac{\pi}{2}\right) - 10$					

**41. Period of Trig Functions. Write a general expression-/formula for the period of the given functions:**

$\sin x$  and  $\cos x \rightarrow \text{per} = \boxed{\phantom{000}}$        $\csc x$  and  $\sec x \rightarrow \text{per} = \boxed{\phantom{000}}$        $\tan x$  and  $\cot x \rightarrow \text{per} = \boxed{\phantom{000}}$

**Write an equation of the specified trig function (in factored form) using the given information.**

42. Tangent function: period =  $4\pi$ , horizontal shift =  $\frac{\pi}{2}$ , vertical shift =  $-10$

43. Cosine function: amplitude =  $\frac{2}{3}$ , period =  $\frac{\pi}{3}$ , horizontal shift =  $-\frac{\pi}{3}$ , vertical shift =  $5$

44. Cotangent function: vertical shift =  $1$ , period =  $\frac{\pi}{2}$ , and horizontal shift =  $-\frac{\pi}{4}$

Refer to your six basic trig graphs to answer #45-52. Use the interval  $0 \leq x \leq 2\pi$  (which means you may have multiple solutions.)

45.  $\arcsin(0)$

46.  $\tan^{-1}(1)$

47.  $\arccos(\cot \frac{\pi}{2})$

48.  $\arctan(-1)$

49.  $\arcsin(1)$

50.  $\cos^{-1}(1)$

51.  $\sin^{-1}[\sec(-5\pi)]$

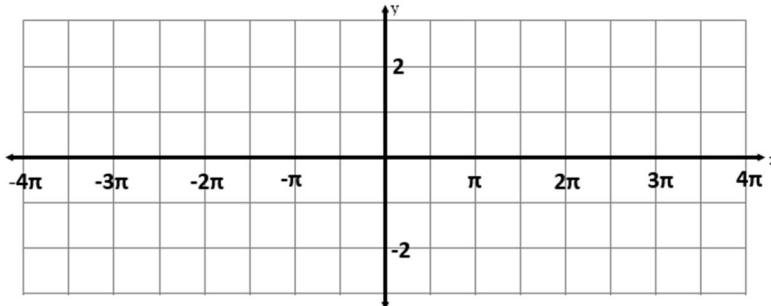
52.  $\tan^{-1}(0)$

53. Identify the amplitude, period, horizontal and vertical

shift for  $y = -2\sin\left(3x - \frac{\pi}{4}\right) + 7$ .

54. Identify the amplitude, period, horizontal and vertical shift, then

sketch the graph of  $y = 2\sin\left(\frac{x}{3} + \frac{\pi}{6}\right) + 1$  for the interval  $-4\pi \leq x \leq 4\pi$



**check answers #45-58**

0 0 0 1 2 2 7

$\frac{2\pi}{3}$  A B C D

$\frac{\pi}{12}$   $\frac{\pi}{4}$   $\frac{3\pi}{4}$   $\frac{5\pi}{4}$   $\frac{7\pi}{4}$

$\frac{-\pi}{2}$   $\frac{\pi}{2}$   $\frac{\pi}{2}$   $\frac{3\pi}{2}$   $\frac{3\pi}{2}$

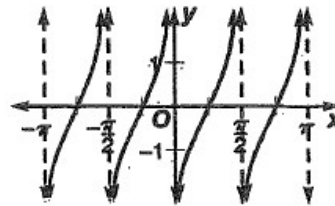
$\pi$   $\pi$   $2\pi$   $2\pi$   $2\pi$   $6\pi$

**Show work for #55-58!! (Factor, then identify period and horizontal shift.)**

55. What is the equation of the graph shown at the right?

A.  $y = \tan 2x$     B.  $y = \tan\left(2x + \frac{\pi}{2}\right)$

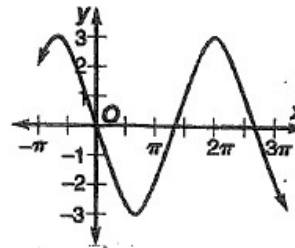
C.  $y = \cot 2x$     D.  $y = \cot\left(2x + \frac{\pi}{2}\right)$



56. What is the equation of the graph shown at the right?

A.  $y = 3 \cos \frac{2x}{3}$     B.  $y = 3 \cos \frac{3x}{4}$

C.  $y = -3 \sin \frac{3x}{4}$     D.  $y = -3 \sin \frac{2x}{3}$



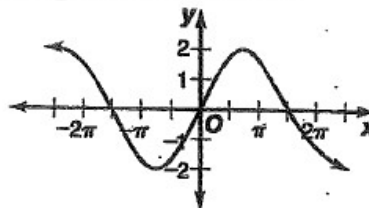
57. What is the equation of the graph shown below?

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

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

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

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



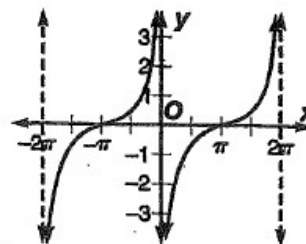
58. What is the equation of the graph shown at the right?

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

B.  $y = -\cot\left(\frac{x}{2} + \frac{\pi}{2}\right)$

C.  $y = \tan\left(\frac{x}{2} - \pi\right)$

D.  $y = -\cot\left(\frac{x}{2} + \pi\right)$



**REMINDER:**

Be sure to factor equations first, then identify the horizontal shift.

**HINT for #55-58:**

Factor first, then use a **process of elimination** as you identify the period and horizontal shift for each equation.