

## Board PROBLEMS Ch.5

1)  $F(x) = 3x - 1$        $G(x) = 2x^2 + 1$

a) find  $f(g(x)) =$

b) find  $g(f(x)) =$

c) find  $g(f(3)) =$

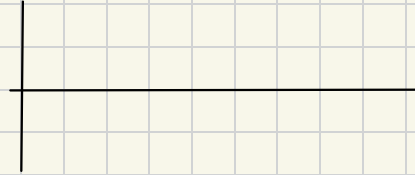
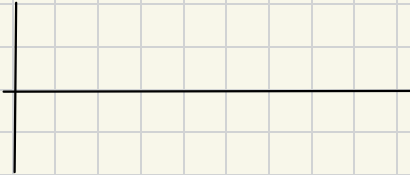
d) find  $f(g(a+1))$

2) Find the inverse of  $f(x) = 3x^2 - 8$

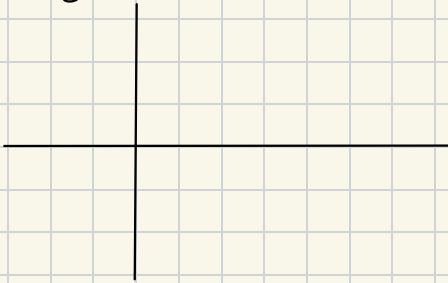
3) Prove it is the inverse.

## Ch. 5 - TRIGONOMETRY REVIEW

DRAW  $y = \sin(x)$  and  $y = \cos(x)$



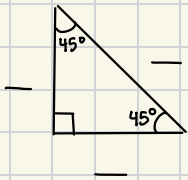
DRAW  $y = \tan(x)$



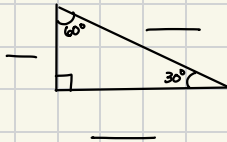
$\tan x =$  \_\_\_\_\_

asymptotes are where

REMEMBER SPECIAL TRIANGLES



and

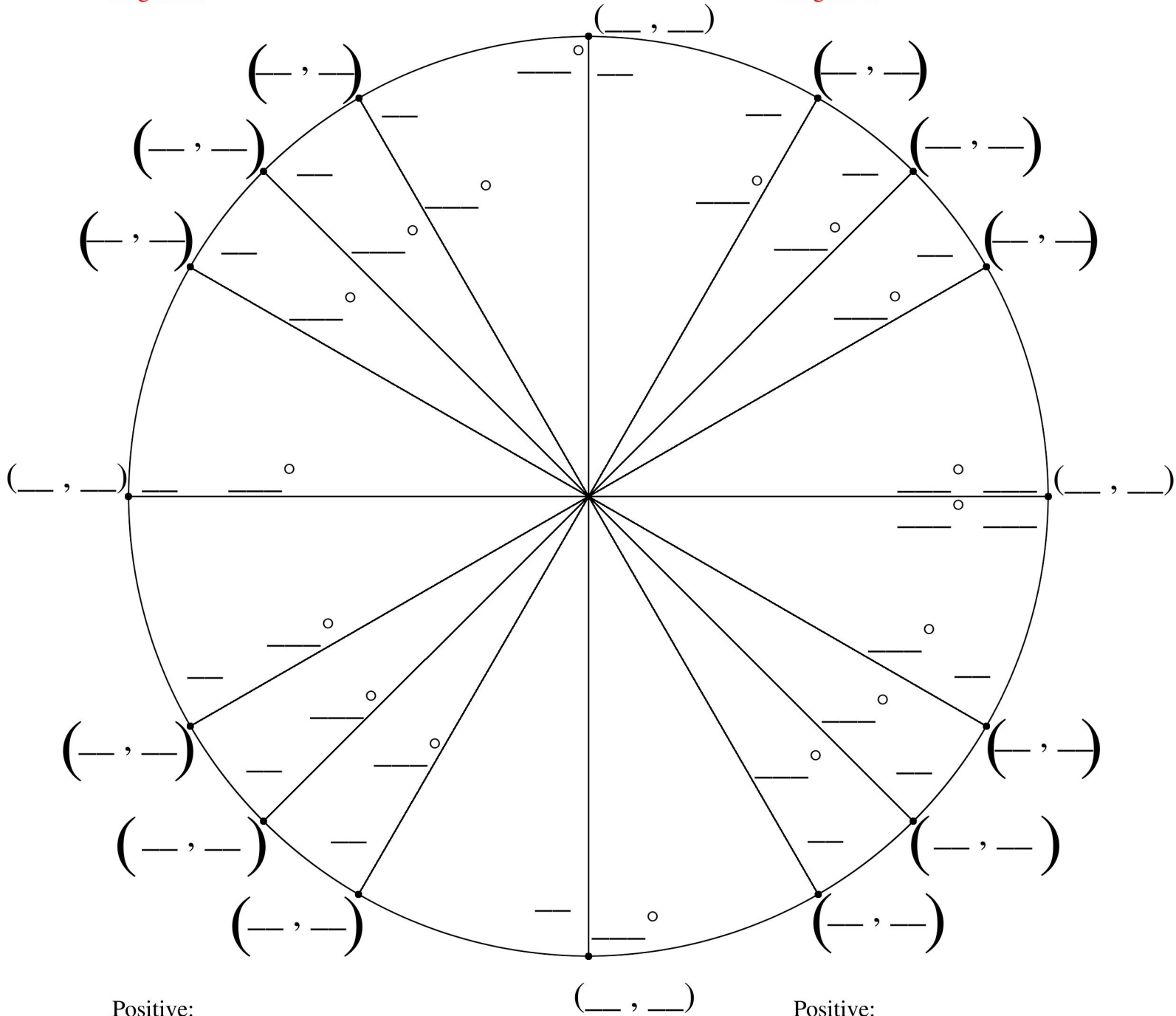


USE THESE VALUES TO FILL IN THE UNIT CIRCLE.

# Fill in The Unit Circle

Positive:  
Negative:

Positive:  
Negative:



Positive:  
Negative:

Positive:  
Negative:

## GENERAL FORM OF SINE AND COSINE FUNCTION

$$y = d + a \sin[b(x-c)]$$

$$d = \underline{\hspace{4cm}}$$

$$a = \underline{\hspace{4cm}}$$

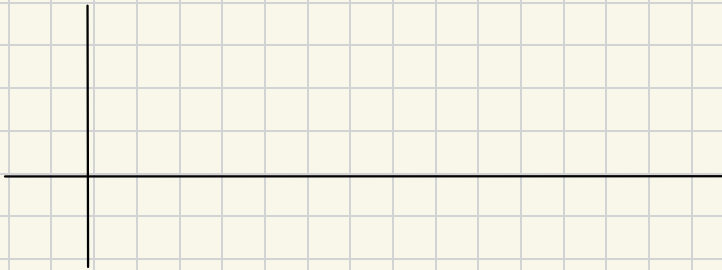
$$b = \underline{\hspace{4cm}}$$

$$c = \underline{\hspace{4cm}}$$

$$\text{Period} = \underline{\hspace{4cm}}$$

$$\text{Graph } f(x) = 1 + 3 \sin\left[2\left(x - \frac{\pi}{2}\right)\right]$$

$$\text{Period} =$$



$$\text{Graph } f(x) = 1 + 2 \cos\left[\frac{1}{2}(x + \pi)\right]$$



Ex. 7

solve

$$\sin(2x + \pi) = 1 \quad \text{at } [0, \pi]$$

where does  $\sin \theta = 1$ ?

when  $\theta = \underline{\hspace{1cm}}, \underline{\hspace{1cm}}, \underline{\hspace{1cm}}$

solve for  $x$  at each  $\theta$

$$2x + \pi =$$

$$2x + \pi =$$

$$2x + \pi =$$

Ex. 8

$$\text{SOLVE: } \cos(2x - \pi) = 0 \quad \text{for } x \text{ in } \left[0, \frac{3\pi}{2}\right]$$

Summary of Graphing  $\sin \theta$

$$y = A \sin[B(\theta - S)] + T$$

Amplitude	Frequency	Phase shift	Translation
$A > 1$	$B > 1$	$S > 0$	$T > 0$
$0 < A < 1$	$0 < B < 1$	$S < 0$	$T < 0$
$A < 0$			

## LESSON PRACTICE

Answer the questions.

1. Draw the graph of  $y = \sin(2x)$ . What is its period?

2. Draw the graph of  $y = \tan\left(\frac{1}{2}x\right)$ . What is its period?

3. Draw the graph of  $y = \cos(3x) + 1$  on  $[0, 2\pi]$ .

4. Draw the graph of  $y = 2 - \sin(x)$  on  $[0, 2\pi]$ .

LESSON PRACTICE 5A

5. Evaluate the following trig functions.

A.  $\sin\left(\frac{3\pi}{4}\right)$

B.  $\cos\left(\frac{\pi}{3}\right)$

C.  $\sec\left(\frac{\pi}{6}\right)$

D.  $\csc\left(\frac{\pi}{2}\right)$

E.  $\tan\left(\frac{7\pi}{6}\right)$

F.  $\cot\left(\frac{5\pi}{4}\right)$

6. Solve for  $x$ :  $\cos(2x) = 1$  for  $x$  in  $[0, \pi]$ .