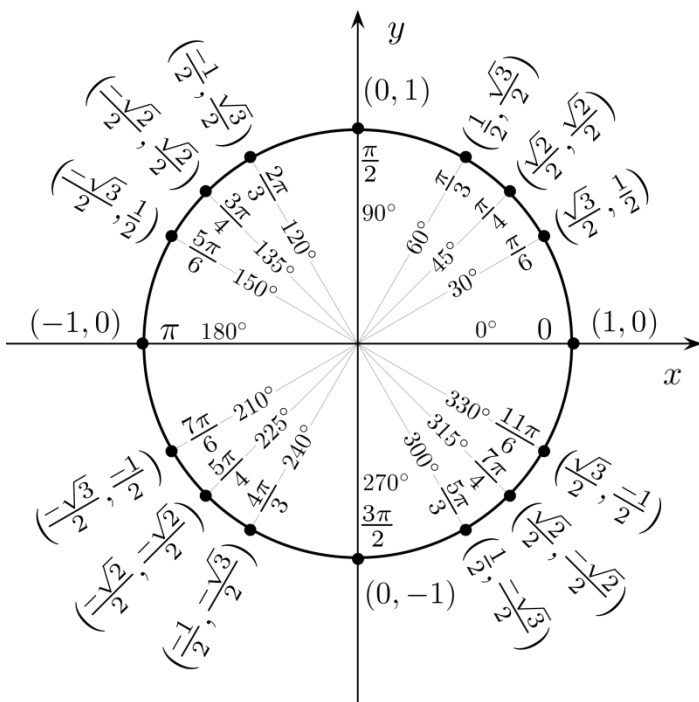


Name:

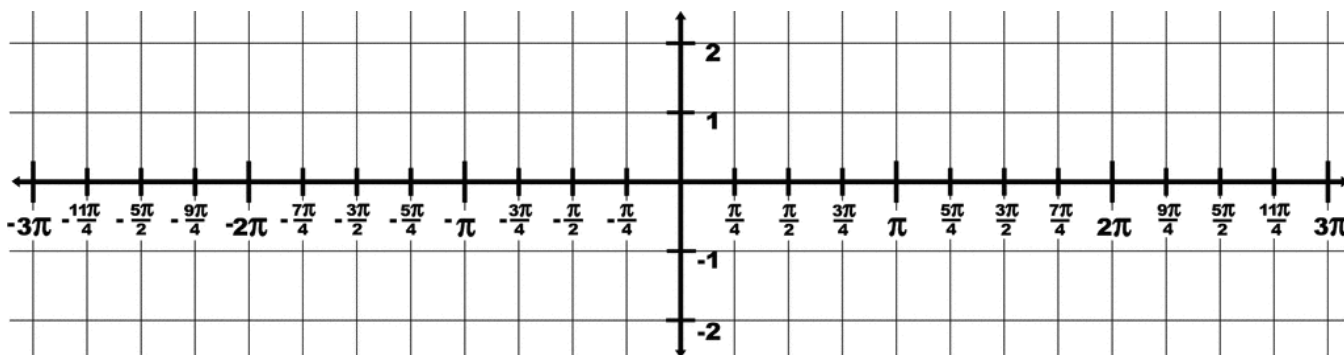
Period:

Date:

### Math Lab: Graphing Periodic Functions

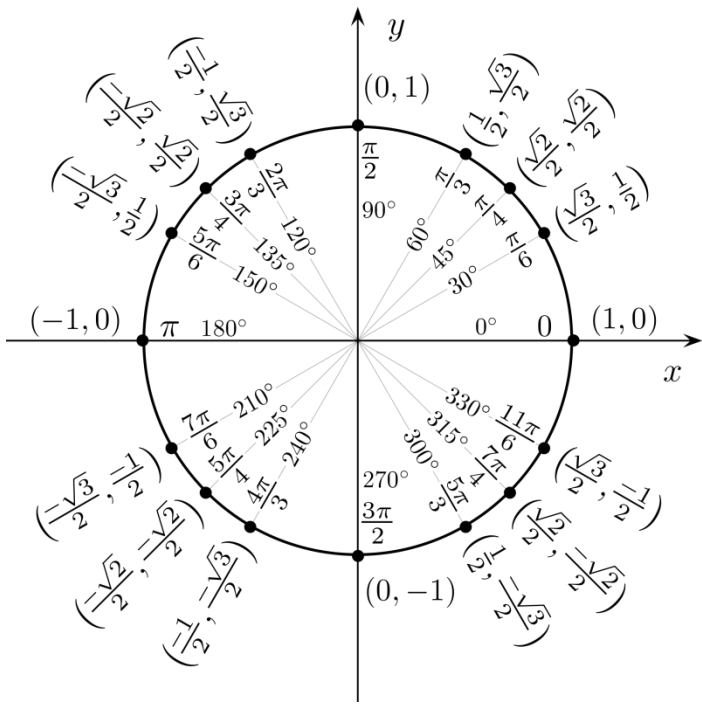


$y = \sin x$	
$x$	$y$
$\pi/4$	
$\pi/2$	
$3\pi/4$	
$\pi$	
$5\pi/4$	
$3\pi/2$	
$7\pi/4$	
$2\pi$	

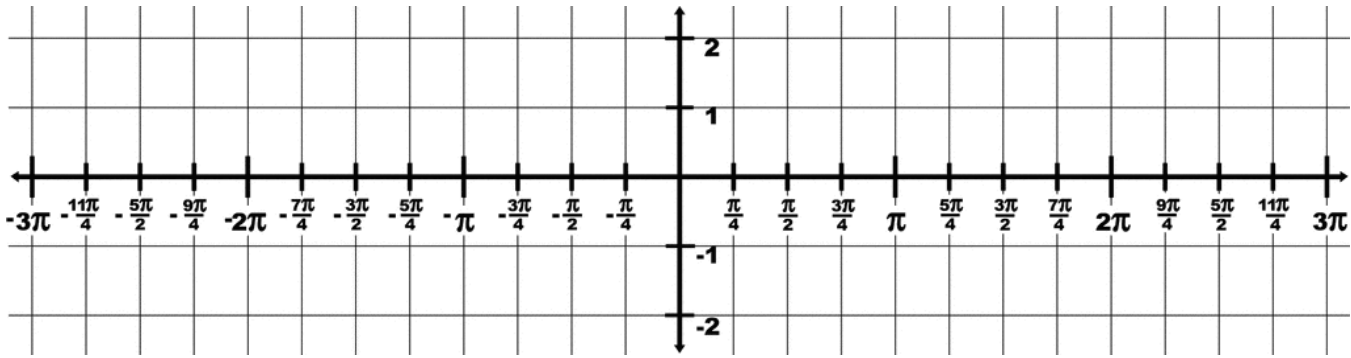


**Periodic functions** are functions that repeat their values at regular intervals or periods. The **period** of a function is the length (along the x-axis) of one complete cycle of the graph. The **amplitude** of a periodic graph is half the distance (along the y-axis) between the maximum and minimum values of the function.

Period:	Absolute max of $y =$	Absolute min of $y =$
Zeros at $x =$	Absolute max at $x =$	Absolute min at $x =$
Amplitude:	Domain:	Range:

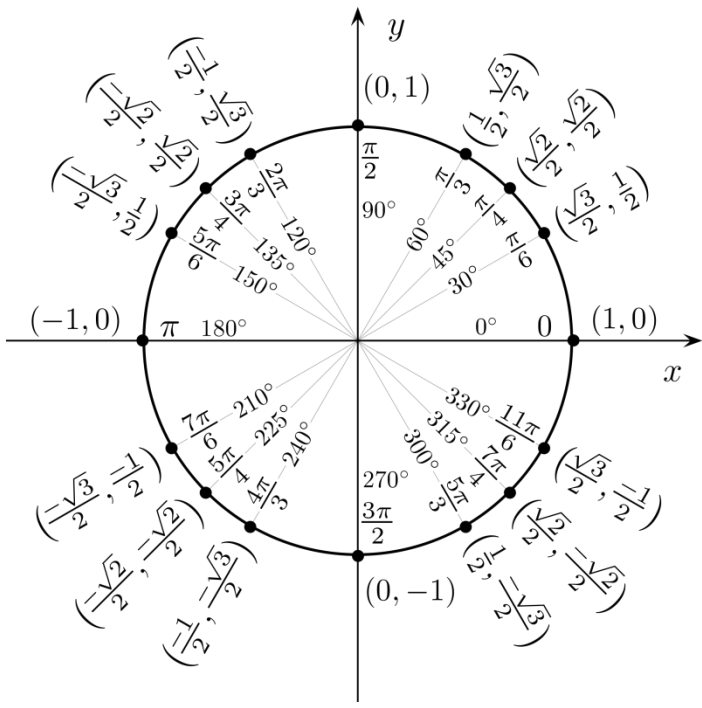


<b><math>y = \cos x</math></b>	
$x$	$y$
$\pi/4$	
$\pi/2$	
$3\pi/4$	
$\pi$	
$5\pi/4$	
$3\pi/2$	
$7\pi/4$	
$2\pi$	



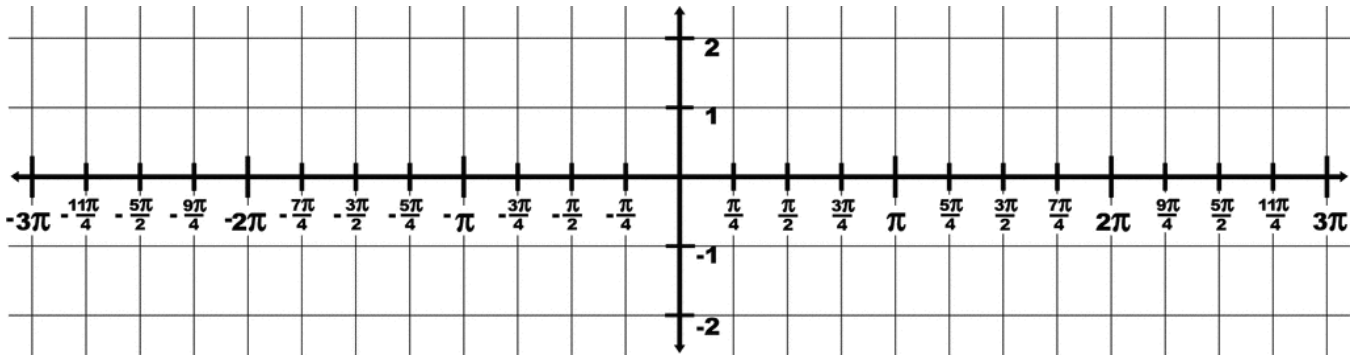
Period:	Absolute max of $y =$	Absolute min of $y =$
Zeros at $x =$	Absolute max at $x =$	Absolute min at $x =$
Amplitude:	Domain:	Range:

Compare and contrast the graphs of sine and cosine:



## y = tan x

x	y
$\pi/4$	
$\pi/2$	
$3\pi/4$	
$\pi$	
$5\pi/4$	
$3\pi/2$	
$7\pi/4$	
$2\pi$	

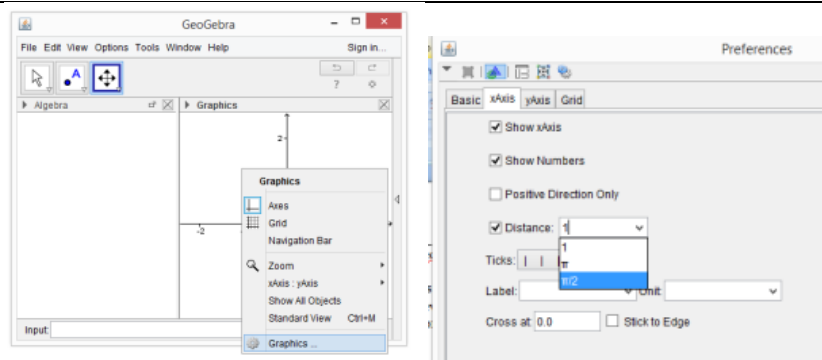


Period:	Absolute max of y =	Absolute min of y =
Zeros at x =	Absolute max at x =	Absolute min at x =
Amplitude:	Domain:	Range:
Asymptotes:	Compare the graph of tangent with the graphs of sine and cosine.	

# Tips for graphing trig functions in Geogebra...

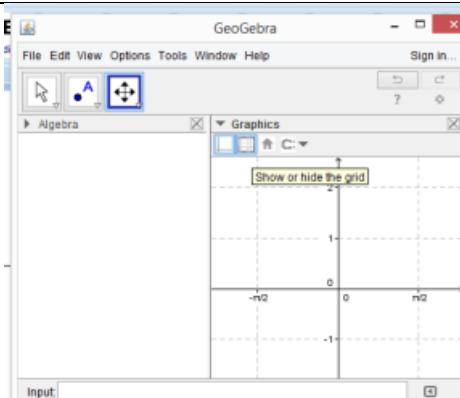
Step 1: Change the scale of the x-axis

- With the “Move Graphics View” tool selected, right click on the coordinate plane and choose “Graphics”.
- Select the x-axis tab, click the button for “distance”, and choose  $\frac{\pi}{2}$  from the dropdown menu. To save, close the preferences window.

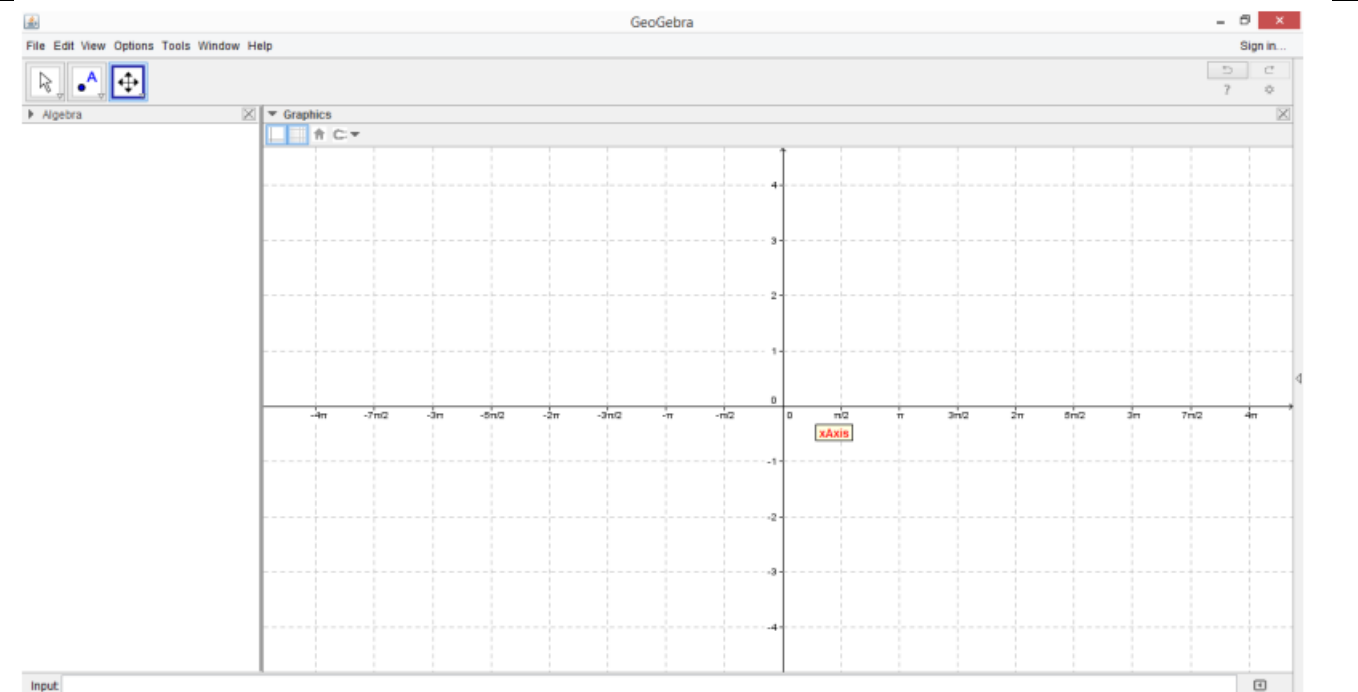


Step 2: Show grid

- Click the little triangle beside the word “Graphics” to drop down the graphics toolbar. Turn on the grid.



Step 3: Adjust scale to show  $-4\pi$  to  $4\pi$  on the x-axis and  $-4$  to  $4$  on the y-axis. (see below)



Remember that before uploading your graphs to My Big Campus, you have to go to “Edit” and choose “Graphics view to clipboard”. Then “paste” the image into PowerPoint. Then right click on the image in PowerPoint and choose “Save picture as...”. Save the picture of your graph (NOT THE POWERPOINT FILE) to your home directory. Then upload that image file to My Big Campus.