

# Drawing the Graphs of the Sine and Cosine Functions - PDF Copy

The presentation contains the slides below with the objective of enabling students to: **Draw the graphs of the trigonometry functions  $y = \sin x$  and  $y = \cos x$**  The presentation contains explanation and graphs to draw that can be checked with answers.

Drawing the Graphs of the Sine and Cosine Functions

Objectives:  
Draw the graphs of:  
 $y = \sin x$  and  $y = \cos x$

Grade B - A\*



1

The two exercises on this presentation can be done on graph paper, but two graphs with labelled axes as shown are available from [www.brain-cells.co.uk](http://www.brain-cells.co.uk)



2

Using your calculator complete this table by finding the sine of each of the angles to 2 dp...

$x^\circ$	0	30	60	90	120	150	180
$\sin x^\circ$							

$x^\circ$	210	240	270	300	330	360
$\sin x^\circ$						

We can plot the coordinates



3

$x^\circ$	0	30	60	90	120	150	180	210	240	270	300	330	360
$\sin x^\circ$	0	0.50	0.87	1	0.87	0.50	0	-0.50	-0.87	-1	-0.87	-0.50	0

We can plot the coordinates

And then use these to draw the graph of  $y = \sin x$



4

$x^\circ$	0	30	60	90	120	150	180	210	240	270	300	330	360
$\cos x^\circ$	1	0.87	0.50	0	-0.50	-0.87	-1	-0.87	-0.50	0	0.50	0.87	1

We can plot the coordinates

And then use these to draw the graph of  $y = \cos x$



5

Using calculator complete this table by finding the cosine of each of the angles to 2 dp...

$x^\circ$	0	30	60	90	120	150	180
$\cos x^\circ$							

$x^\circ$	210	240	270	300	330	360
$\cos x^\circ$						

We can plot the coordinates



6

$x^\circ$	0	30	60	90	120	150	180	210	240	270	300	330	360
$\sin x^\circ$	0	0.50	0.87	1	0.87	0.50	0	-0.50	-0.87	-1	-0.87	-0.50	0

We can plot the coordinates

And then use these to draw the graph of  $y = \cos x$



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$x^\circ$	0	30	60	90	120	150	180	210	240	270	300	330	360
$\cos x^\circ$	1	0.87	0.50	0	-0.50	-0.87	-1	-0.87	-0.50	0	0.50	0.87	1

We can plot the coordinates

And then use these to draw the graph of  $y = \cos x$



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Comparing the Graphs of Sine and Cosine



9

What is the max and min values for both graphs?  
 $\pm 1$

How far does the cosine graph lag behind the sine graph?  
 $90^\circ$



10

What do you think happens before  $0^\circ$  and after  $360^\circ$ ?  
It continues in the same pattern

What is the interval or phase for each graph before it repeats its pattern or cycle?  
 $360^\circ$



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