

Examples



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Workout

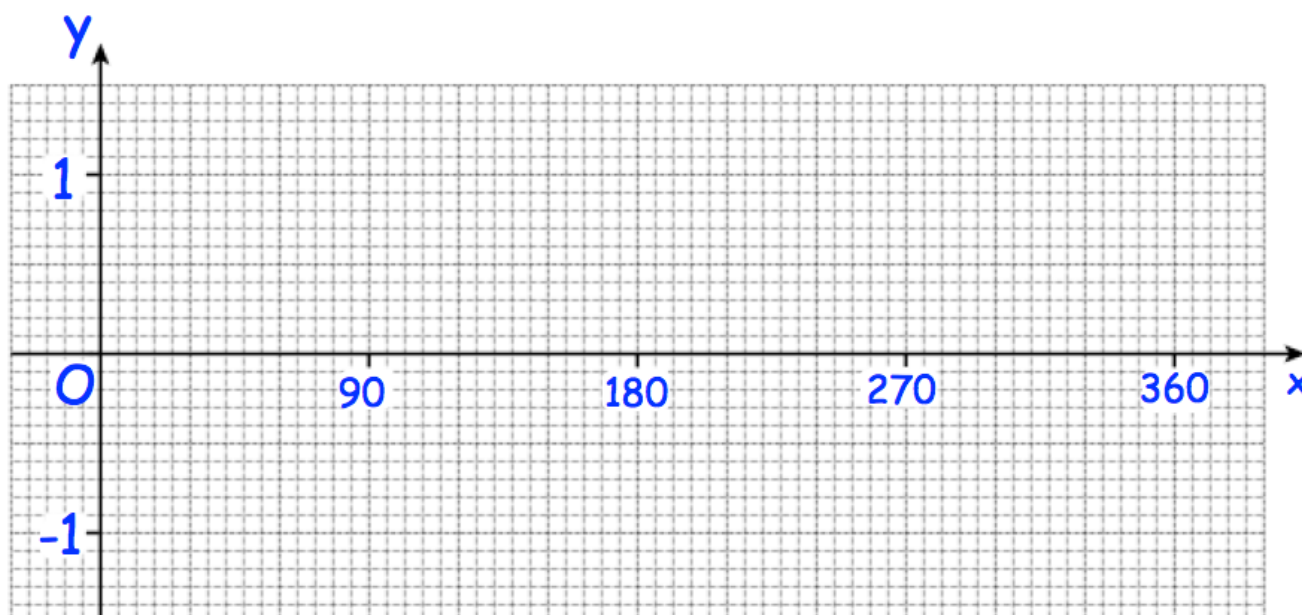
Question 1: (a) Complete the tables below for  $y = \sin(x)$

x	$0^\circ$	$30^\circ$	$45^\circ$	$60^\circ$	$90^\circ$	$120^\circ$
y						

x	$135^\circ$	$150^\circ$	$180^\circ$	$210^\circ$	$225^\circ$	$240^\circ$
y						

x	$270^\circ$	$300^\circ$	$315^\circ$	$330^\circ$	$360^\circ$
y					

(b) Plot the points and draw the graph of  $y = \sin(x)$



## Graphs of Trigonometric Functions

Videos 338, 339 & 340 on [www.corbettmaths.com](http://www.corbettmaths.com)

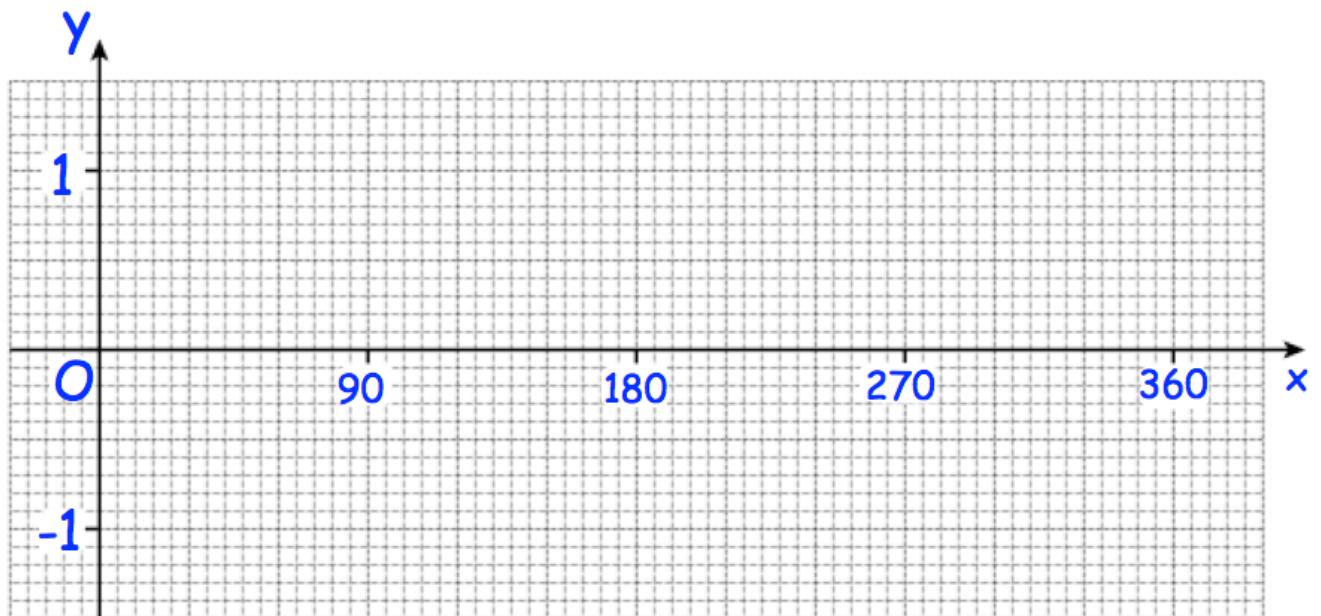
Question 2: (a) Complete the tables below for  $y = \cos(x)$

x	$0^\circ$	$30^\circ$	$45^\circ$	$60^\circ$	$90^\circ$	$120^\circ$
y						

x	$135^\circ$	$150^\circ$	$180^\circ$	$210^\circ$	$225^\circ$	$240^\circ$
y						

x	$270^\circ$	$300^\circ$	$315^\circ$	$330^\circ$	$360^\circ$
y					

(b) Plot the points and draw the graph of  $y = \cos(x)$



## Graphs of Trigonometric Functions

Videos 338, 339 & 340 on [www.corbettmaths.com](http://www.corbettmaths.com)

Question 3: (a) Complete the tables below for  $y = \tan(x)$

x	0°	1°	15°	30°	45°	60°
y						

x	75°	89°	90°	91°	105°	120°
y						

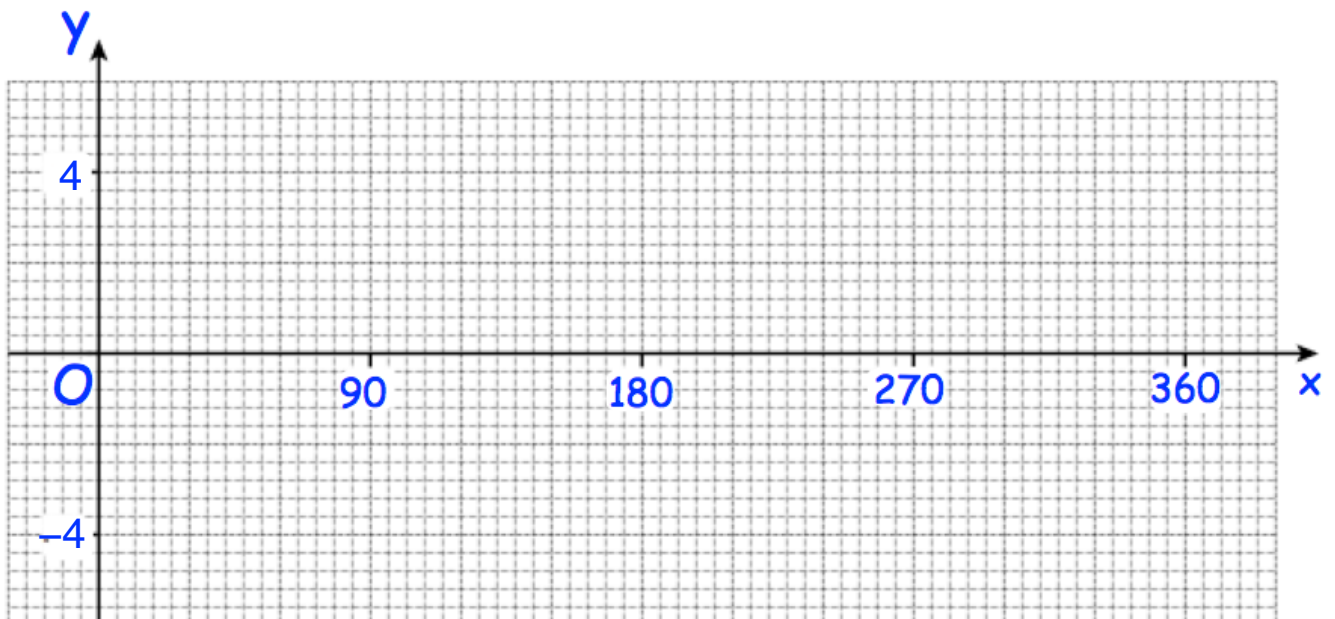
x	135°	150°	165°	179°	180°	181°
y						

x	195°	210°	225°	240°	255°	269°
y						

x	270°	271°	285°	300°	315°	330°
y						

x	345°	360°
y		

(b) Plot the points and draw the graph of  $y = \tan(x)$

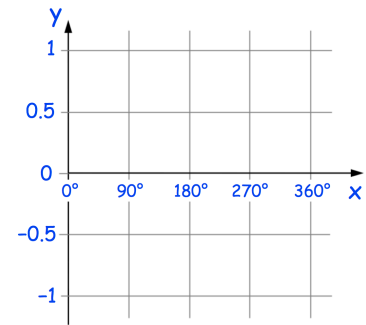


## Graphs of Trigonometric Functions

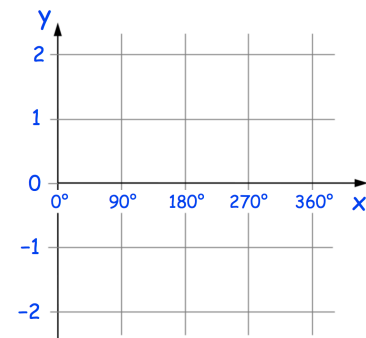
Videos 338, 339 & 340 on [www.corbettmaths.com](http://www.corbettmaths.com)

Question 4: Sketch the graph of  $y = \cos(x)$  for  $0^\circ \leq x \leq 360^\circ$

Question 5: Sketch the graph of  $y = \sin(x)$  for  $0^\circ \leq x \leq 360^\circ$



Question 6: Sketch the graph of  $y = \tan(x)$  for  $0^\circ \leq x \leq 360^\circ$



### Apply

Question 1: Which of these values cannot be the sine of an angle?

0    -0.9     $\frac{2}{3}$     1.2

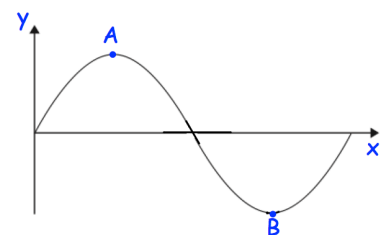
Question 2: Which of these values cannot be the cosine of an angle?

-1    3    0.7    -0.04

Question 3: Here is part of the curve  $y = \sin(x)$

(a) Write down the coordinates of the point A

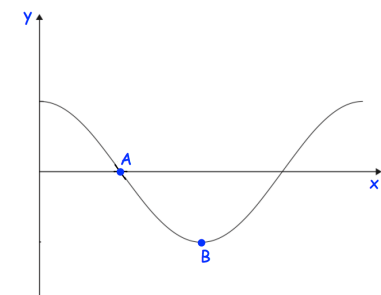
(b) Write down the coordinates of the point B



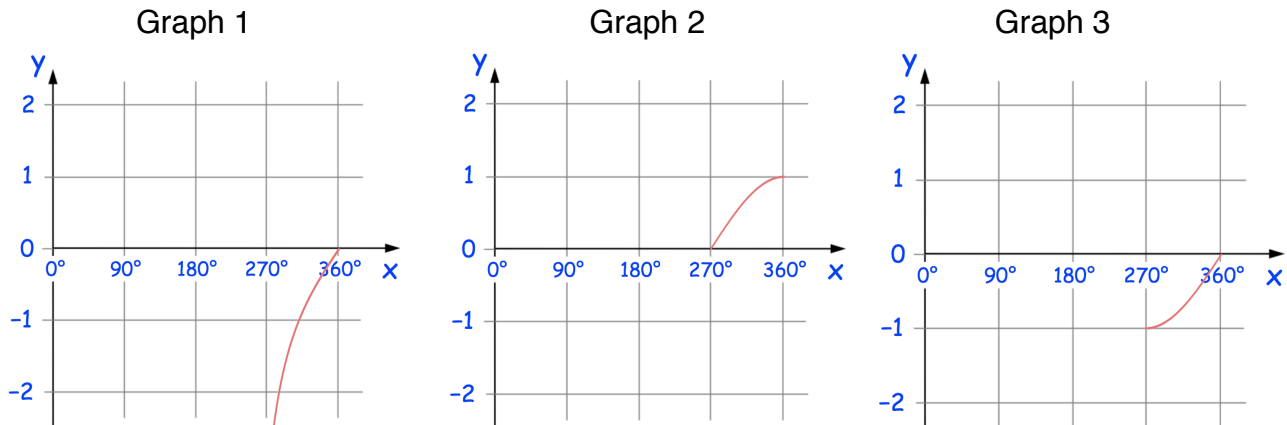
Question 4: Here is part of the curve  $y = \cos(x)$

(a) Write down the coordinates of the point A

(b) Write down the coordinates of the point B



Question 5: Here are three graphs for  $270^\circ \leq x \leq 360^\circ$



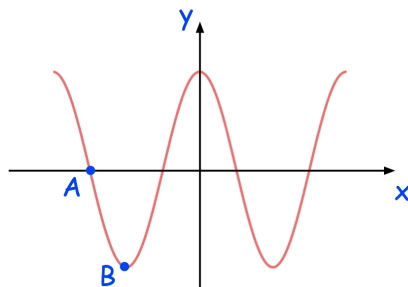
- (a) Which graph is  $y = \sin(x)$ ?
- (b) Which graph is  $y = \cos(x)$ ?
- (c) Which graph is  $y = \tan(x)$ ?

Question 6: Write down the coordinates of the maximum point of  $y = \sin(x)$  for  $180^\circ \leq x \leq 540^\circ$

Question 7: Write down the coordinates of the minimum point of  $y = \sin(x)$  for  $360^\circ \leq x \leq 720^\circ$

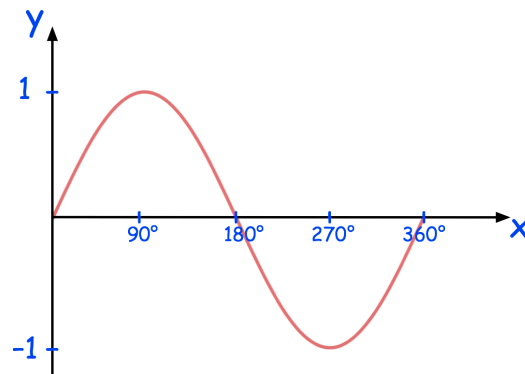
Question 8: Write down the coordinates of the minimum point of  $y = \cos(x)$  for  $360^\circ \leq x \leq 720^\circ$

Question 9: Here is a sketch of  $y = \cos(x)$  for  $-360^\circ \leq x \leq 360^\circ$



- (a) Write down the coordinates of the point A
- (b) Write down the coordinates of the point B

Question 10: Here is the graph of  $y = \sin(x)$  for  $0^\circ \leq x \leq 360^\circ$

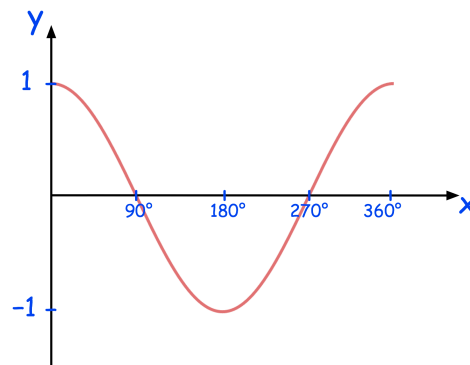


One solution of  $\sin(x^\circ) = -0.5$  is  $x = 210^\circ$

(a) Find another solution of  $\sin(x^\circ) = -0.5$  for  $0^\circ \leq x \leq 360^\circ$

(b) Find the solutions of  $\sin(x^\circ) = 0.5$  for  $0^\circ \leq x \leq 360^\circ$

Question 11: Here is a sketch of  $y = \cos(x)$  for  $0^\circ \leq x \leq 360^\circ$



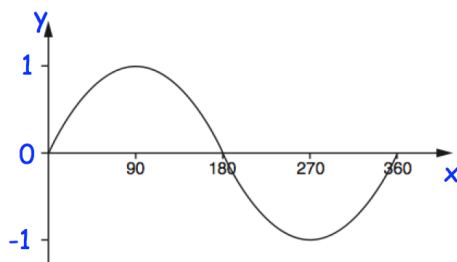
$\cos(x) = \cos(30^\circ)$

(a) Work out the value of  $x$  when  $90^\circ \leq x \leq 360^\circ$

$\cos(x) = -\cos(30^\circ)$

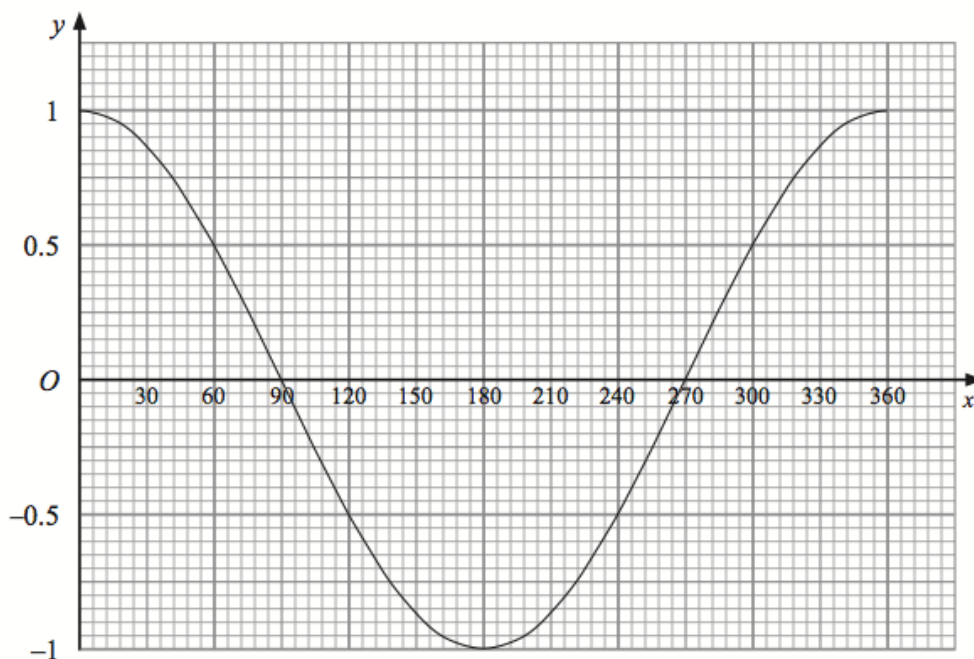
(b) Find the two values of  $x$  for  $0^\circ \leq x \leq 360^\circ$

Question 12: Here is the graph of  $y = \sin(x)$  for  $0 \leq x \leq 360$



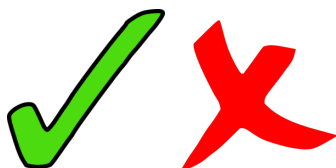
One solution of  $\sin x = -0.5$  is  $x = 330^\circ$   
Find another solution of  $\sin x = -0.5$

Question 13: Here is the graph of  $y = \cos(x)$



- (a) Use the graph to solve  $\cos(x) = 0.75$
- (b) Use the graph to solve  $\cos(x) = -0.75$

Answers



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