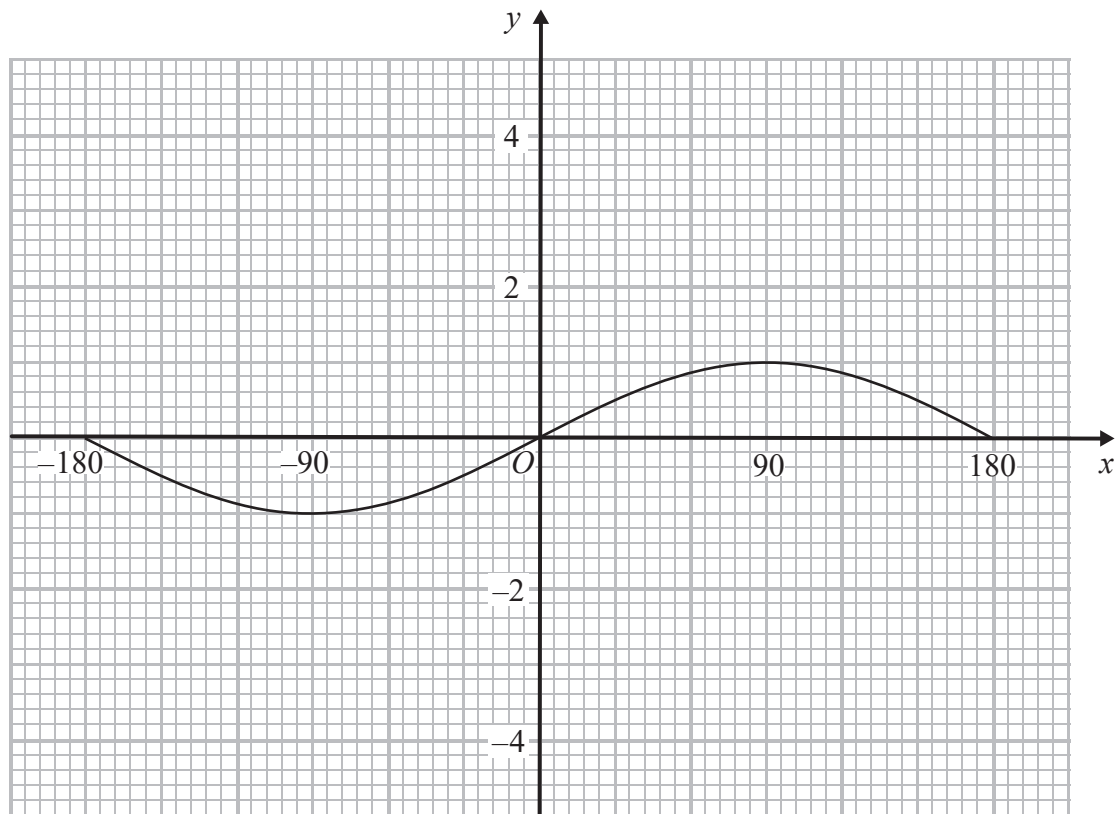


1 Here is the graph of $y = \sin x^\circ$ for $-180 \leq x \leq 180$



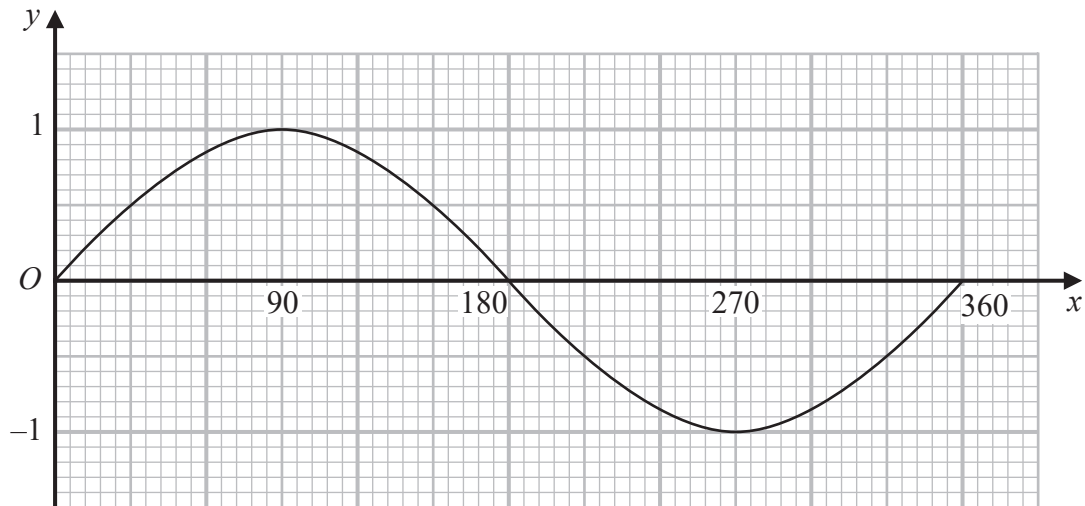
On the grid, sketch the graph of $y = \sin x^\circ - 2$ for $-180 \leq x \leq 180$

(Total for Question 1 is 2 marks)

- 2 Find the exact value of $\tan 30^\circ \times \sin 60^\circ$
Give your answer in its simplest form.

.....
(Total for Question 2 is 2 marks)

3 Here is a graph of $y = \sin x^\circ$ for $0 \leq x \leq 360$



(a) Using this graph, find estimates of all **four** solutions of

$$\sin x^\circ = 0.6 \quad \text{for } 0 \leq x \leq 720$$

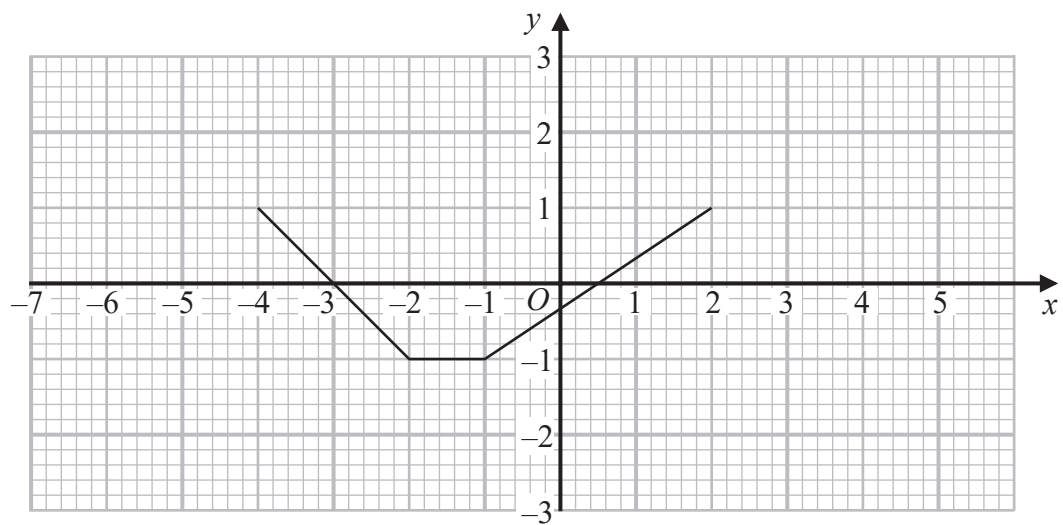
..... (2)

The graph of $y = \sin x^\circ$ is reflected in the x -axis.

(b) Write down an equation of the reflected graph.

..... (1)

Here is a graph of $y = f(x)$



(c) On the grid, draw the graph of $y = f(x - 2)$

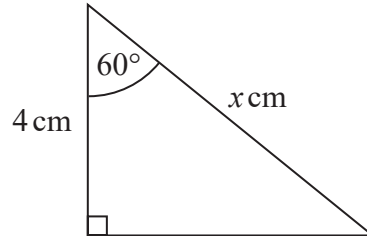
(1)

(Total for Question 3 is 4 marks)

- 4 (a) Write down the exact value of $\tan 45^\circ$

.....
(1)

Here is a right-angled triangle.



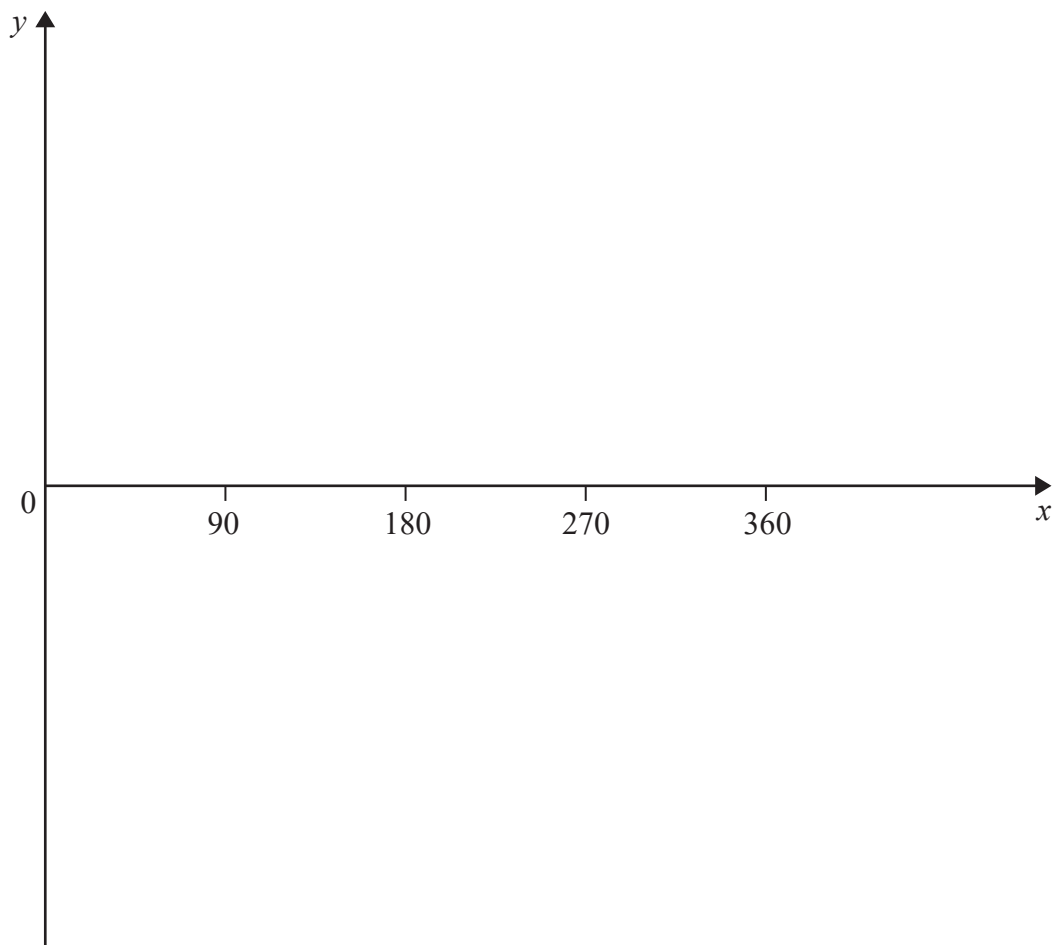
$$\cos 60^\circ = 0.5$$

- (b) Work out the value of x .

.....
(2)

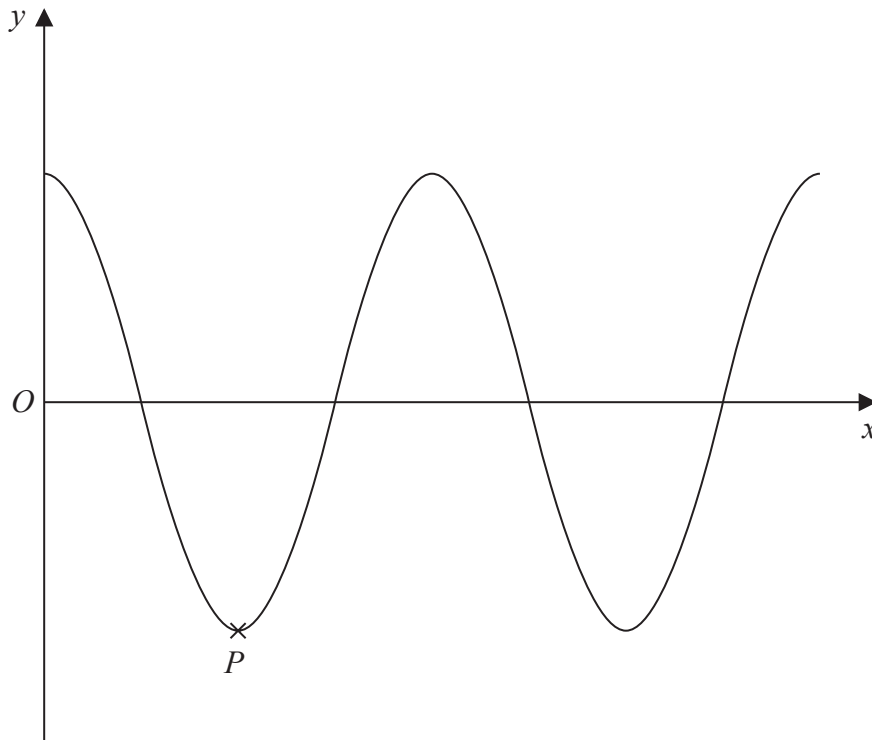
(Total for Question 4 is 3 marks)

5 Sketch the graph of $y = \tan x^\circ$ for $0 \leq x \leq 360$



(Total for Question 5 is 2 marks)

6



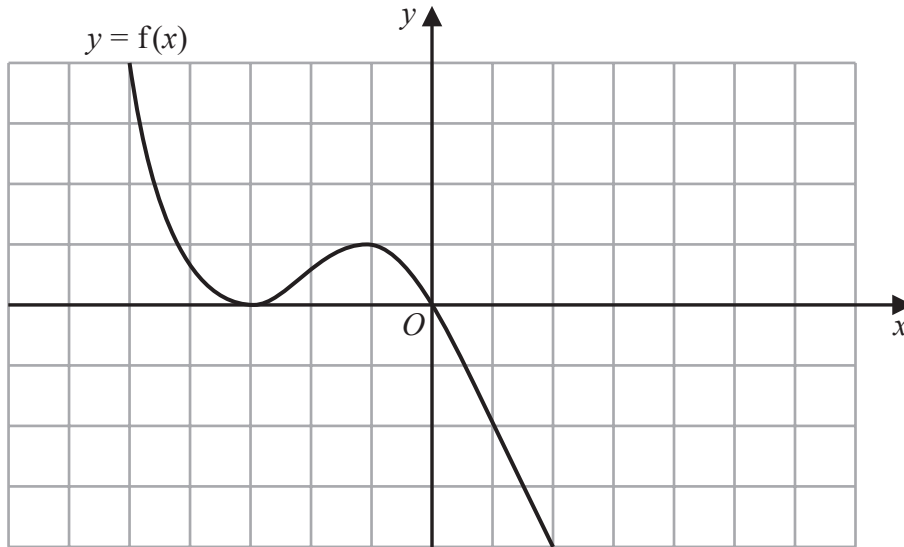
The diagram shows a sketch of part of the curve with equation $y = \cos x^\circ$
 P is a minimum point on the curve.

Write down the coordinates of P .

(..... ,)

(Total for Question 6 is 2 marks)

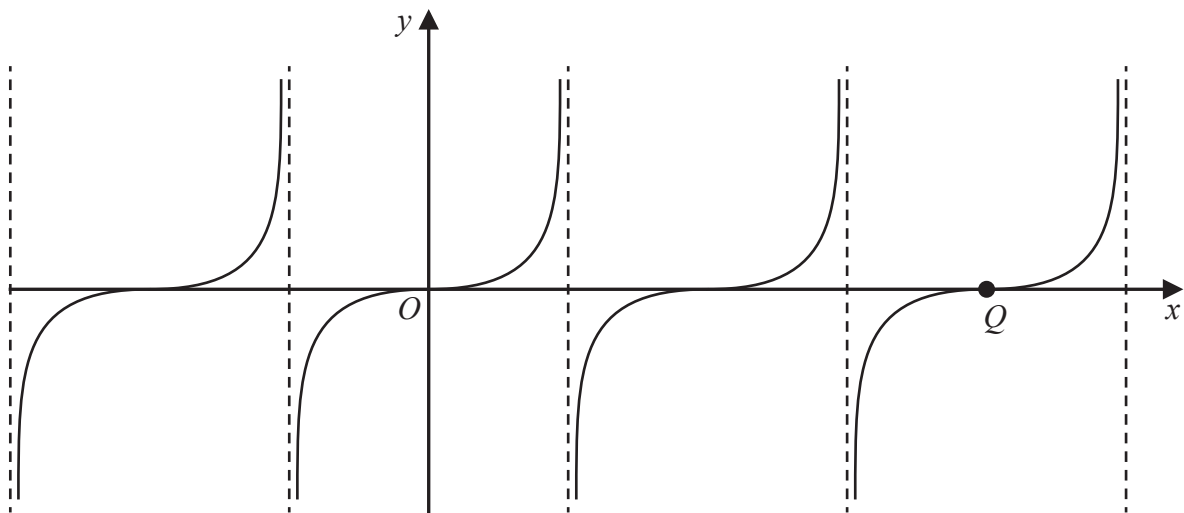
7 The graph of $y = f(x)$ is shown on the grid below.



(a) On the grid above, sketch the graph of $y = f(-x)$

(1)

Here is a sketch of the graph of $y = \tan x^\circ$



The graph of $y = \tan x^\circ$ is translated to give the graph of $y = g(x)$

Following the translation the point Q , shown on the graph above, moves to point R .
Point R has coordinates $(90, -5)$

(b) Find an expression for $g(x)$ in terms of x .

(2)

(Total for Question 7 is 3 marks)

8 The table shows some values of x and y that satisfy the equation $y = a \cos x^\circ + b$

x	0	30	60	90	120	150	180
y	3	$1 + \sqrt{3}$	2	1	0	$1 - \sqrt{3}$	-1

Find the value of y when $x = 45$

.....
(Total for Question 8 is 4 marks)
