**1**   The graph of $y = f(x)$ is shown on both grids below.
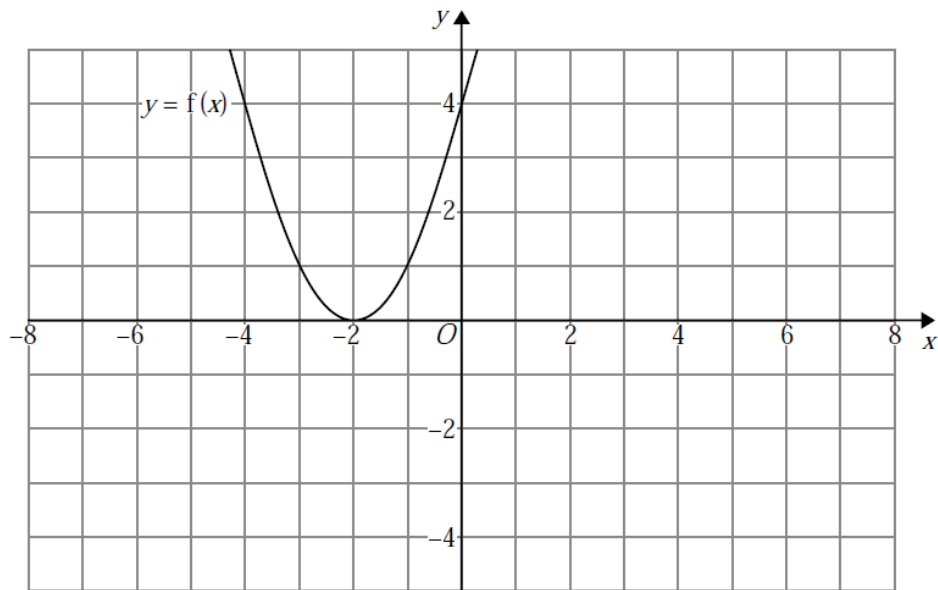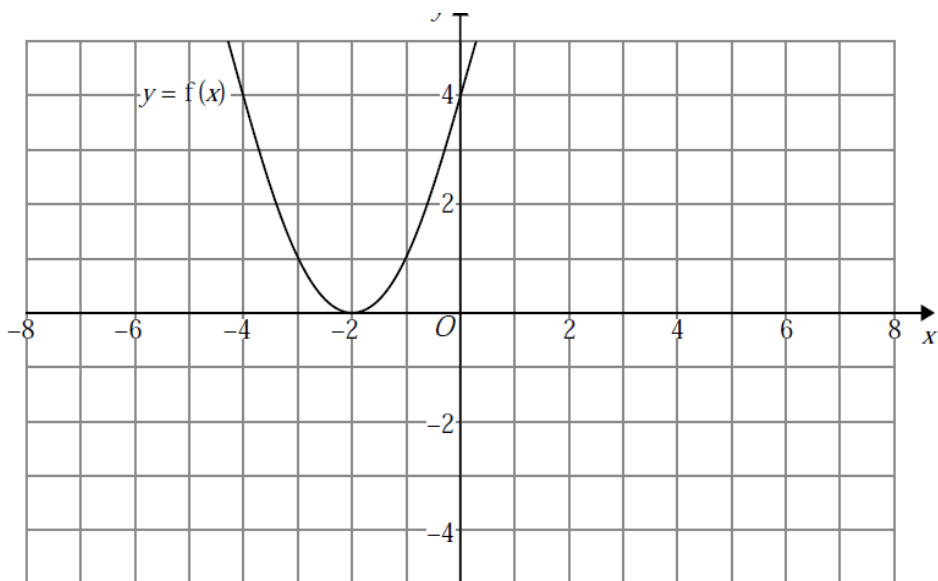


(a)  On the grid above, sketch the graph of $y = f(-x)$
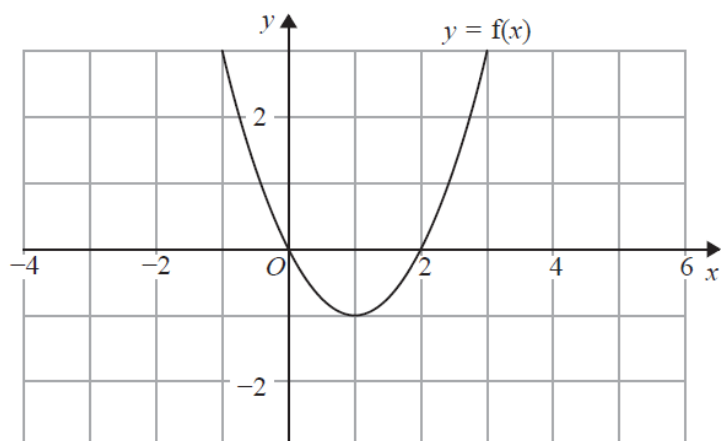
(1)



(b)  On this grid, sketch the graph of $y = -f(x) + 3$
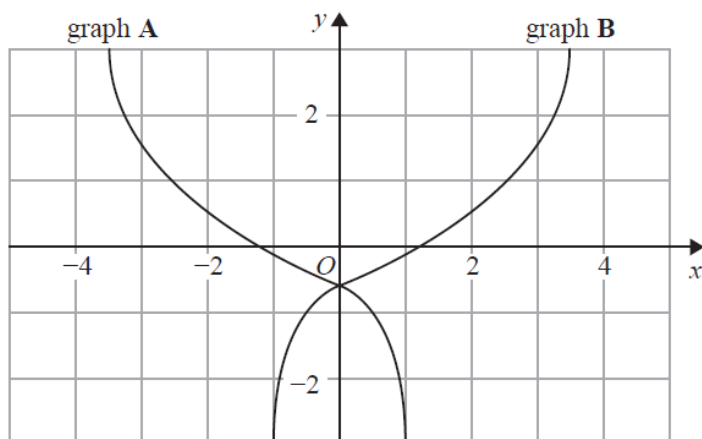
(1)

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

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



(a) On the grid above, sketch the graph of $y = f(x - 2)$

**(1)**



On the grid, graph **A** has been reflected to give graph **B**.

The equation of graph **A** is $y = g(x)$

(b) Write down the equation of graph **B**.

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**(1)**

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

**3**   The graph of the curve C with equation  $y = f(x)$  is transformed to give the graph of
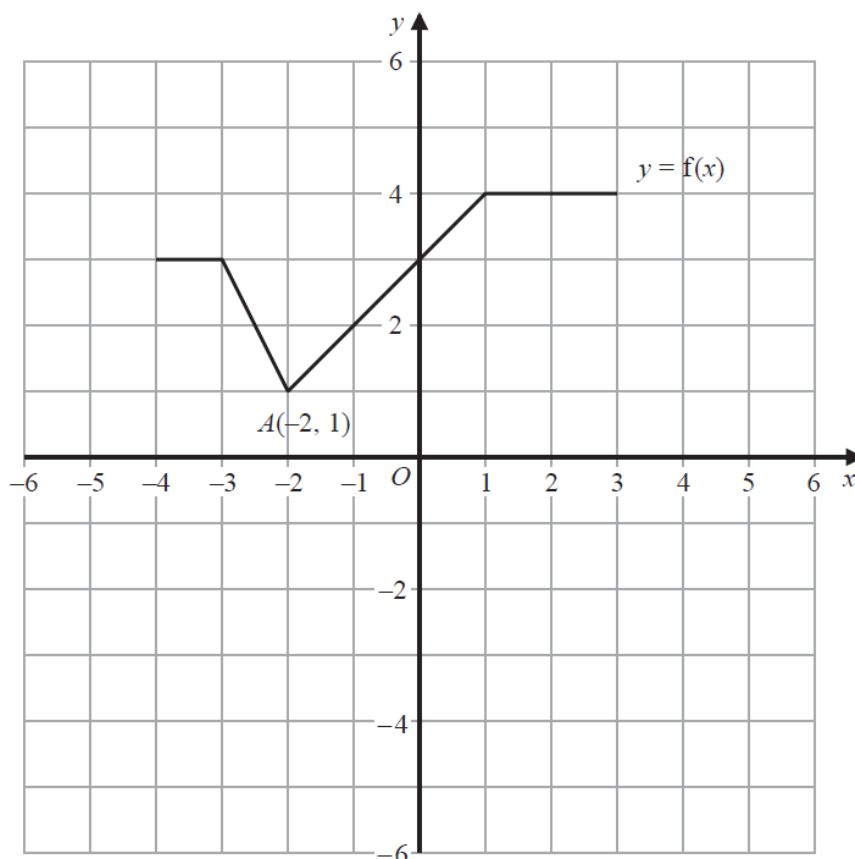the curve S with equation  $y = f(-x) - 3$

The point on C with coordinates $(7, 2)$ is mapped to the point $Q$ on S.

Find the coordinates of $Q$.

(........................ , ........................)

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

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



$y = f(x)$

$A(-2, 1)$

(a) On the grid, draw the graph with equation $y = f(x + 1) - 3$

(2)

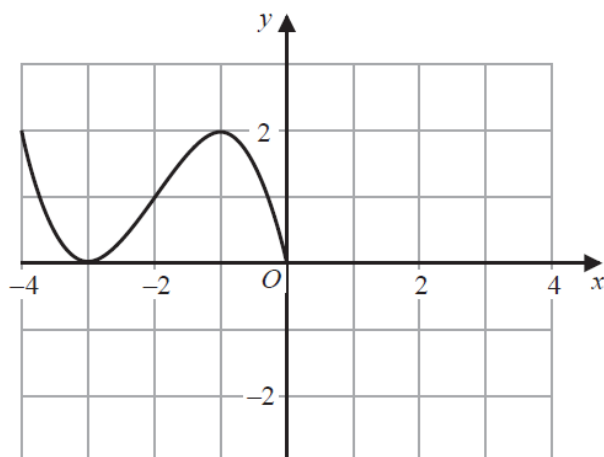Point $A(-2, 1)$ lies on the graph of $y = f(x)$.

When the graph of $y = f(x)$ is transformed to the graph with equation $y = f(-x)$, point $A$ is mapped to point $B$.

(b) Write down the coordinates of point $B$.

(.............................. , ..............................)
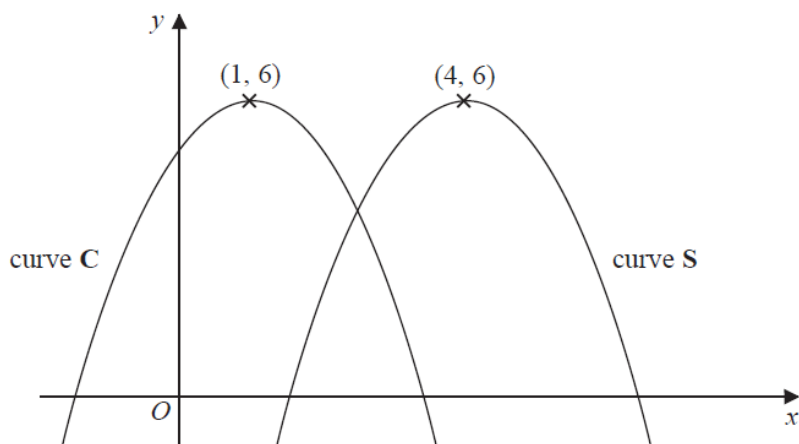
(1)

**(Total for Question     is 3 marks)**

**5**   The graph of the curve with equation  $y = f(x)$  is shown on the grid below.



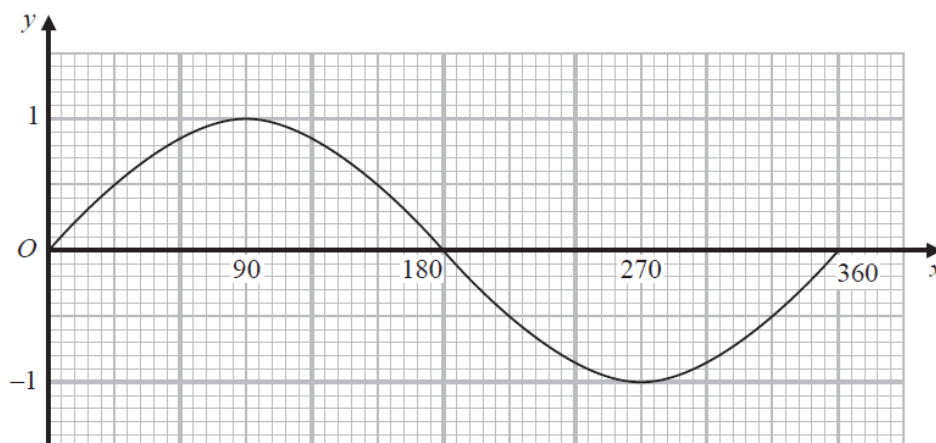(a) On the grid above, sketch the graph of the curve with equation  $y = f(-x)$

(2)



The curve **C** with equation  $y = 5 + 2x - x^2$  is transformed by a translation to give the curve **S** such that the point $(1, 6)$ on **C** is mapped to the point $(4, 6)$ on **S**.

(b) Find an equation for **S**.

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(2)

**(Total for Question     is 4 marks)**

**6**   Here is a graph of $y = \sin x°$ for $0 \leqslant x \leqslant 360$



(a) Using this graph, find estimates of all **four** solutions of
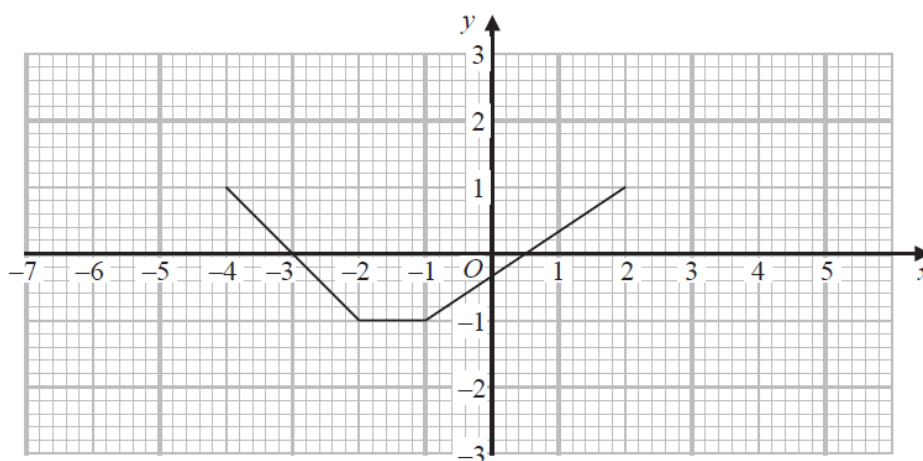
$$\sin x° = 0.6 \quad \text{for } 0 \leqslant x \leqslant 720$$

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(2)

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

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

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(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    is 4 marks)**