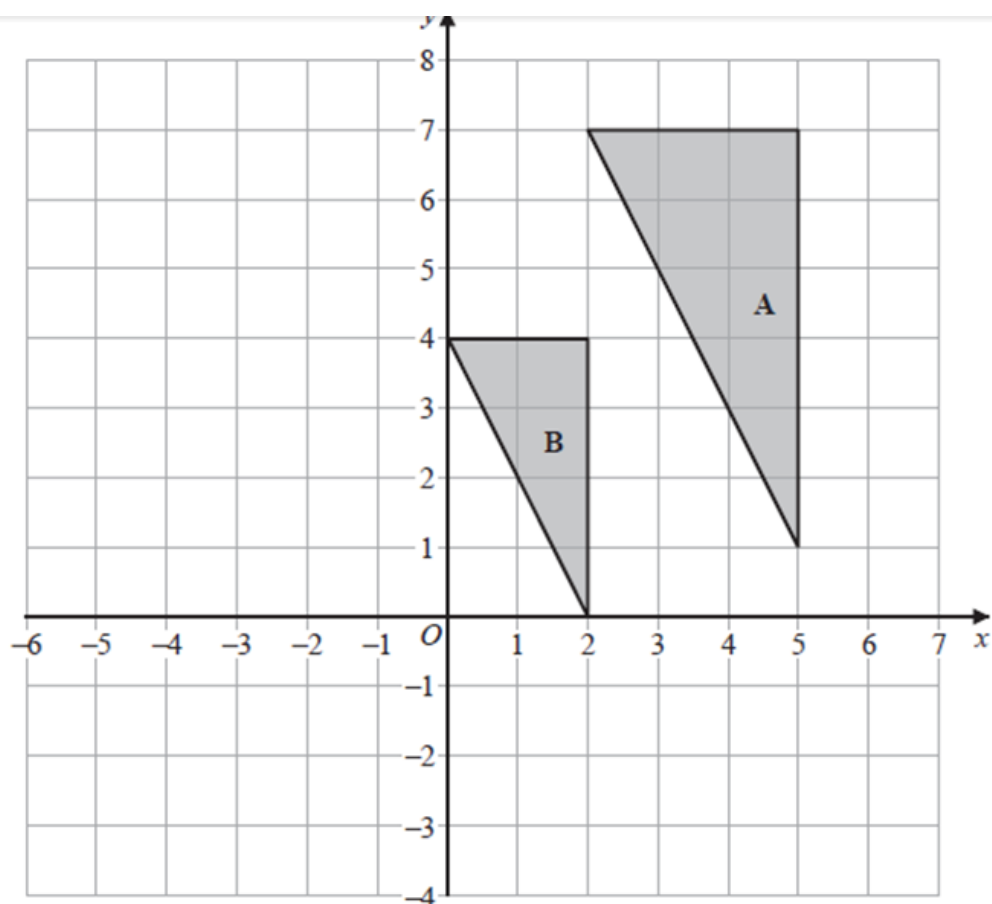


**QUESTION 1**



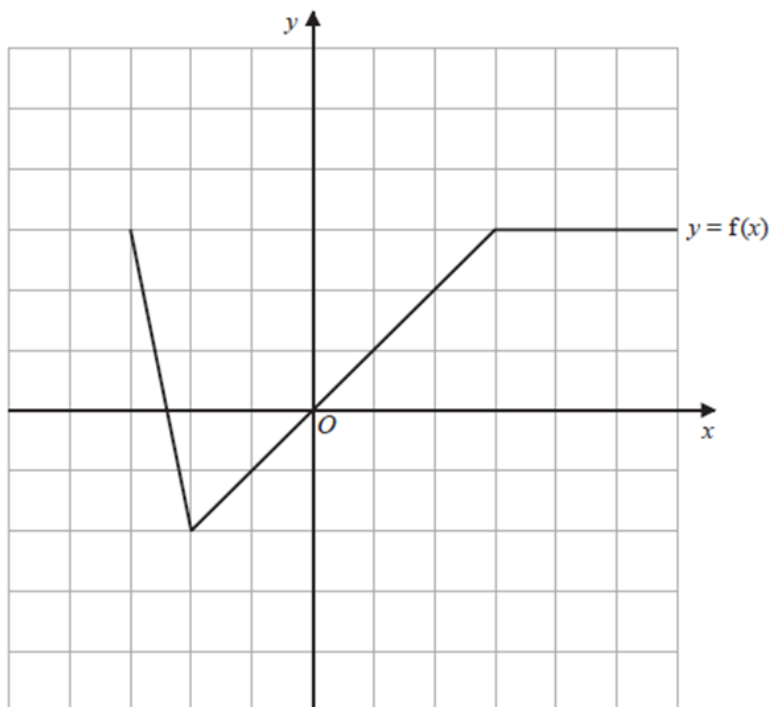
Describe fully the single transformation that maps triangle **B** onto triangle **A**.

.....  
|  
.....

**(2 marks)**

## QUESTION 2

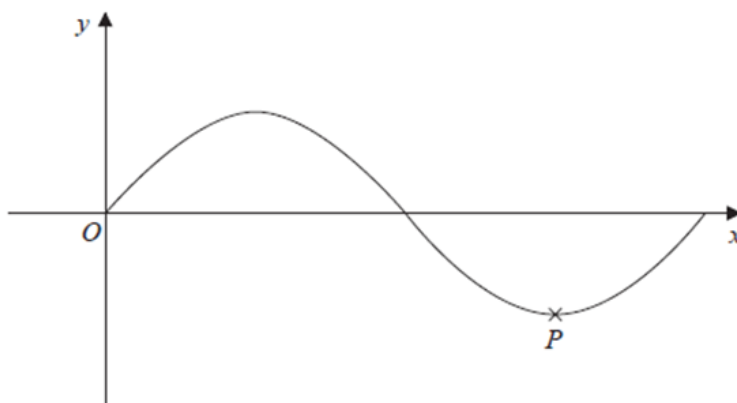
Here is the graph of  $y = f(x)$



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

(1)

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



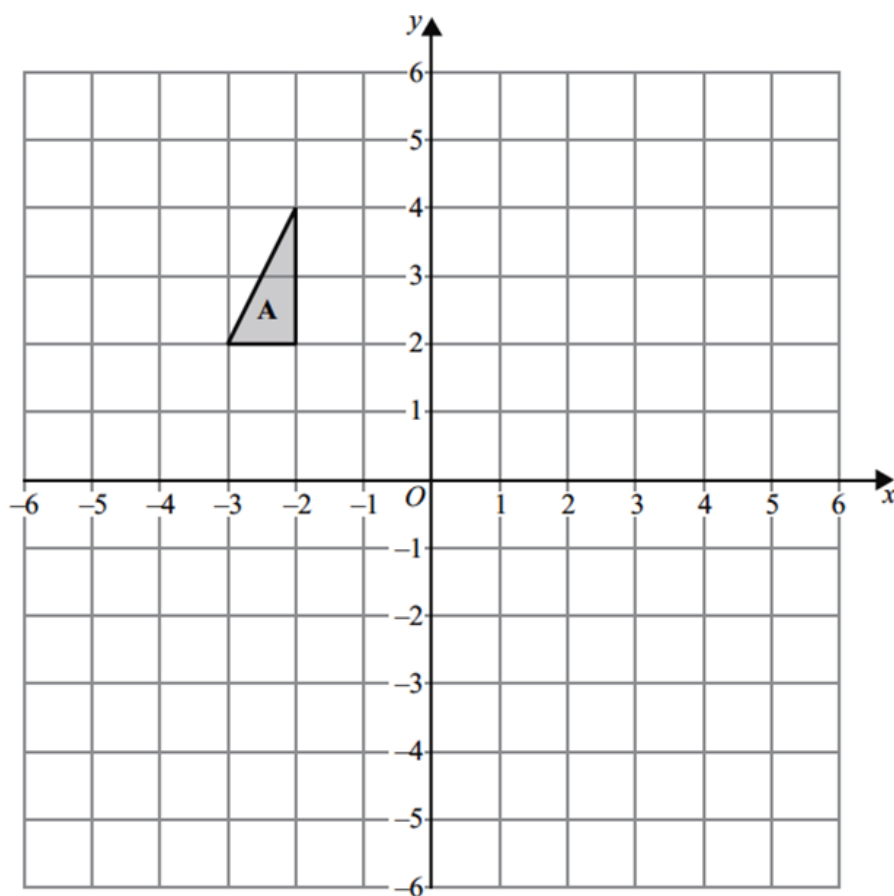
The point marked  $P$  is a turning point on the graph.

The graph of  $y = \sin x^\circ$  is translated to give the graph of  $y = \sin(x - 90)^\circ + 2$

Following the translation the point  $P$ , shown on the graph above, moves to point  $R$ .

(b) Find the coordinates of  $R$ .

( ..... , ..... )  
(3)

**QUESTION 3**

Triangle **A** is translated by the vector  $\begin{pmatrix} 4 \\ -6 \end{pmatrix}$  to give triangle **B**.

Triangle **B** is rotated  $90^\circ$  clockwise about the point  $(0, -2)$  to give triangle **C**.

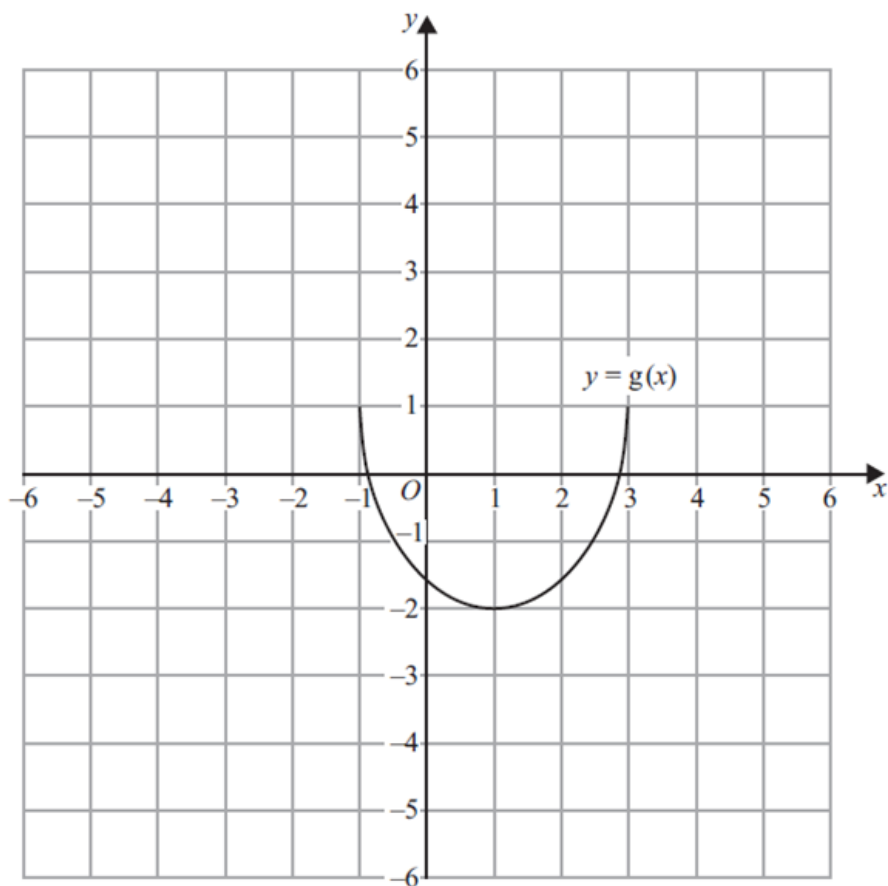
Describe fully the single transformation that maps triangle **A** onto triangle **C**.

.....

**(3 marks)**

**QUESTION 4**

The graph of  $y = g(x)$  is shown on the grid.



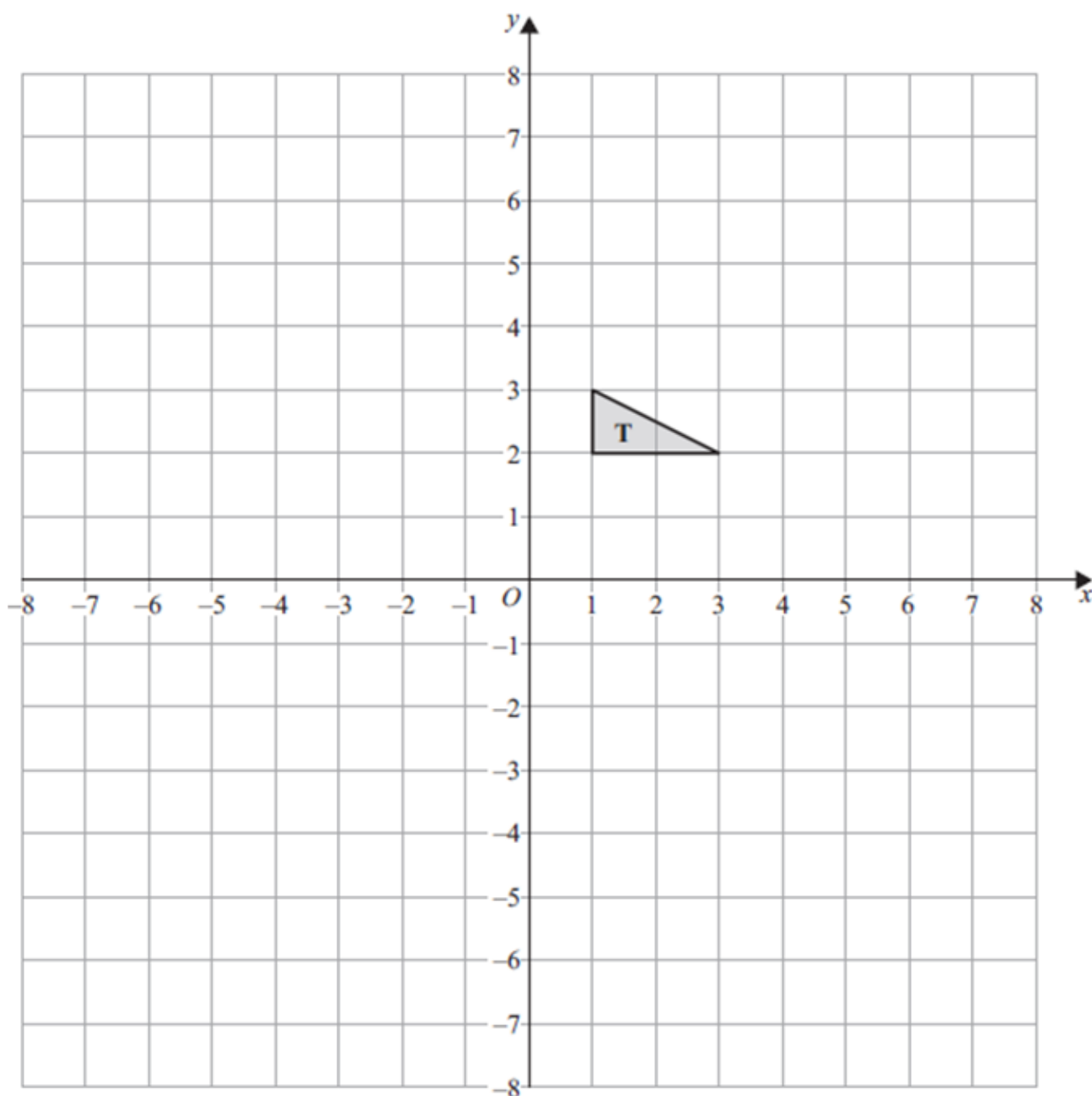
On the grid, draw the graph of  $y = g(-x) - 2$

**(2 marks)**

---

**Question 5**

The diagram shows triangle **T** drawn on a grid.



Enlarge triangle **T** by scale factor  $-2$  with centre of enlargement  $(0, 1)$

**[2]**

**QUESTION 6**

The turning point on the graph of  $y = g(x)$  has coordinates  $(-4, 7)$

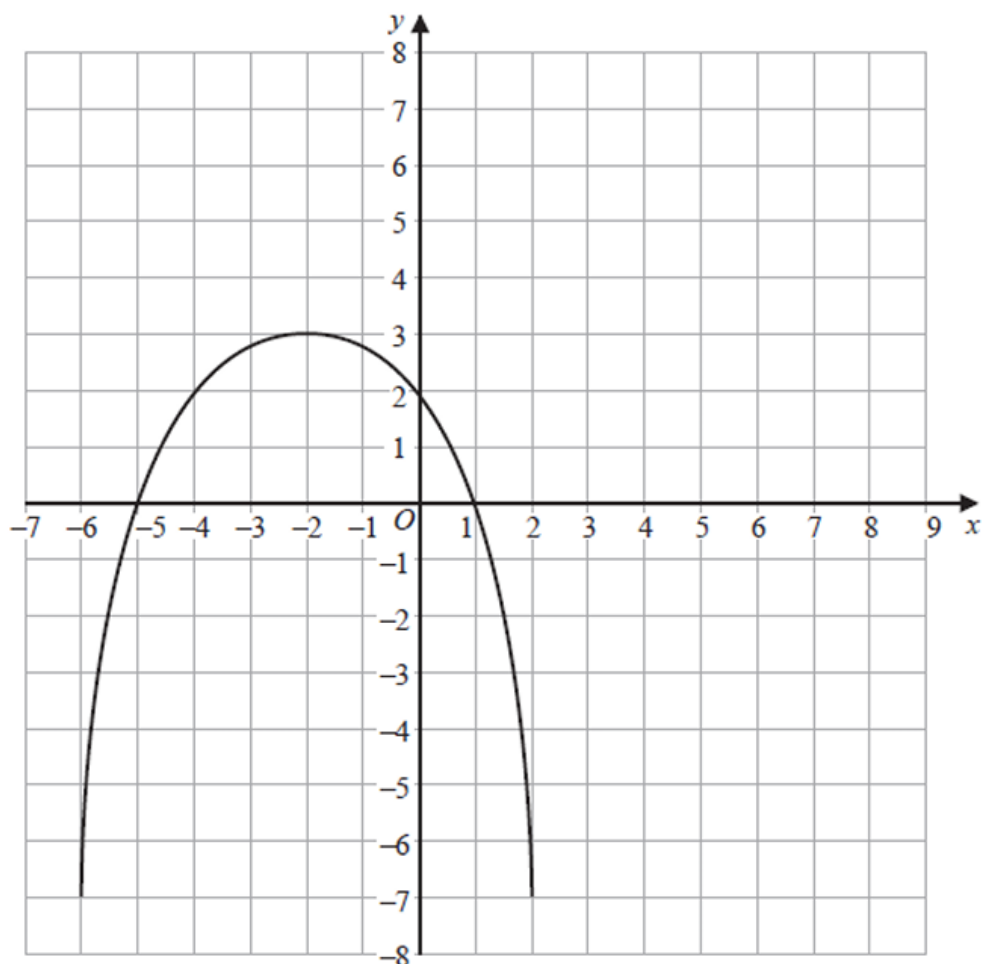
(a) Write down the coordinates of the turning point on the graph of  $y = g(x + 2)$

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

**(1)**

✓

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

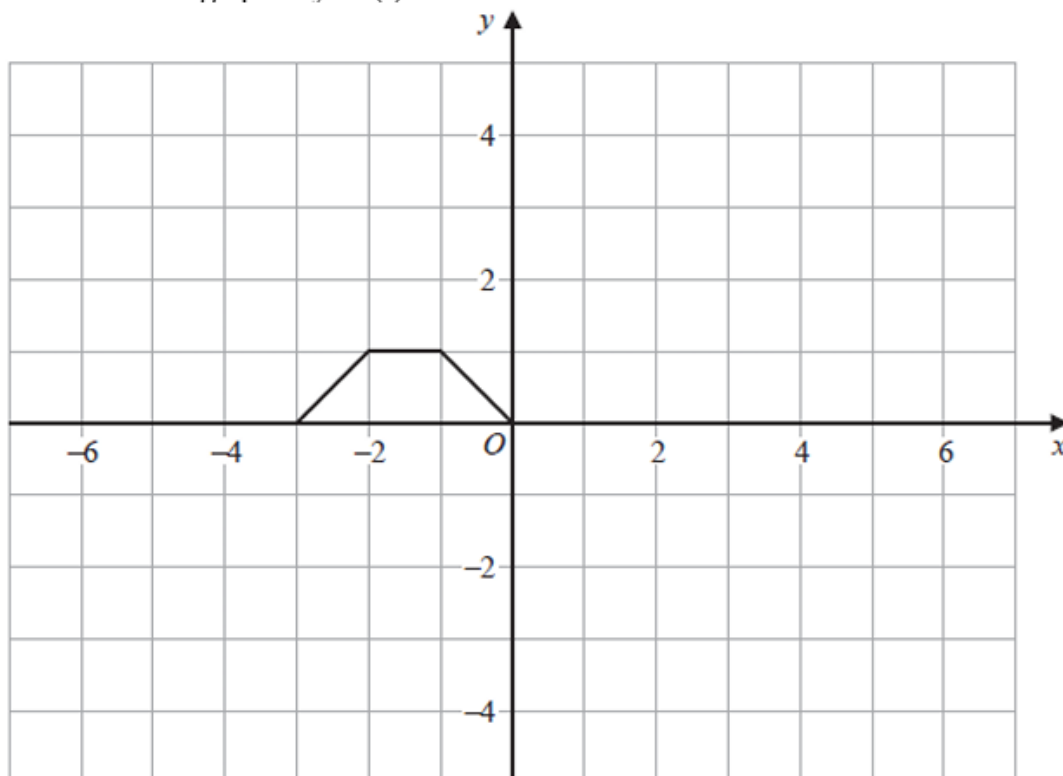


(b) On the grid, sketch the graph of  $y = f(-x) - 1$

**(2)**

### Question 7

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



(a) On the grid below, draw the graph of  $y = f(x) + 3$

(b) On the grid below, draw the graph of  $y = -f(x)$

**(2)**

### Question 8

Shape **A** is reflected in the line with equation  $y = 3$  to give shape **B**.

Shape **B** is reflected in the line with equation  $y = 6$  to give shape **C**.

Describe fully the **single** transformation that maps shape **A** onto shape **C**.

.....

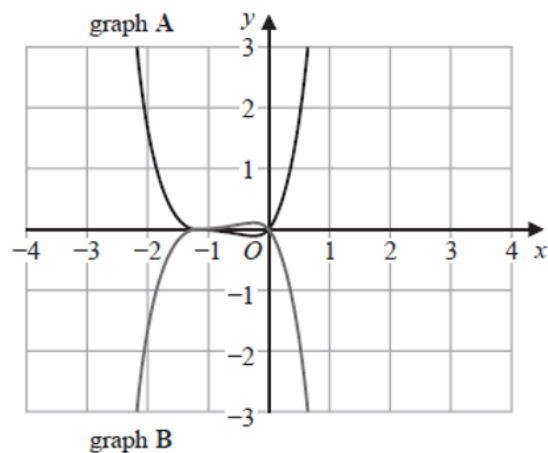
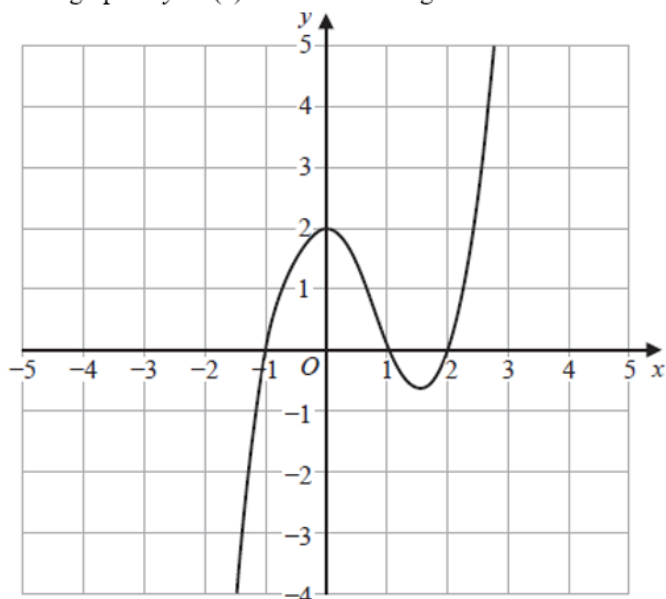
.....

.....

**(2 marks)**

### Question 9

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



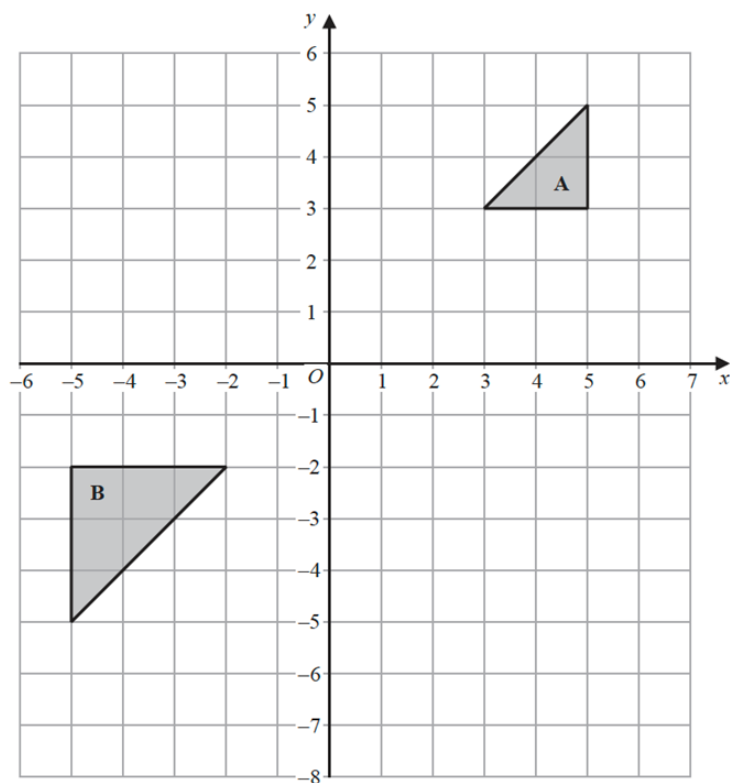
On this grid, graph **B** has been reflected to give graph **A**.  
The equation of graph **B** is  $y = g(x)$

(b) Write down an equation of graph **A**. .....

(1)

(a) On the grid above, sketch the graph of  $y = f(x - 2)$  (1)

### QUESTION 10

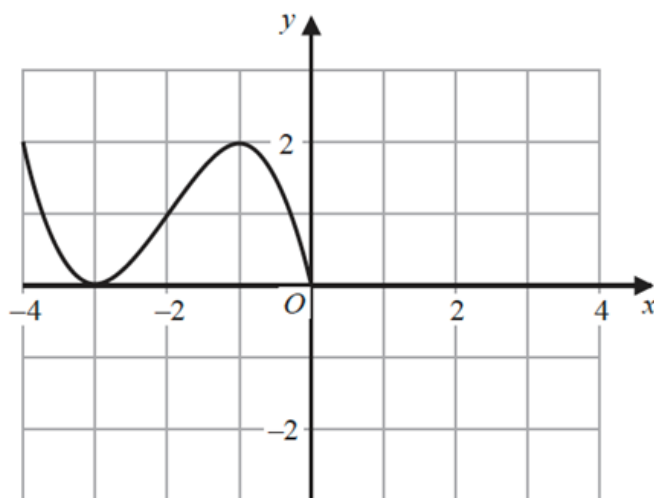


Describe fully the single transformation that maps triangle **B** onto triangle **A**.

.....

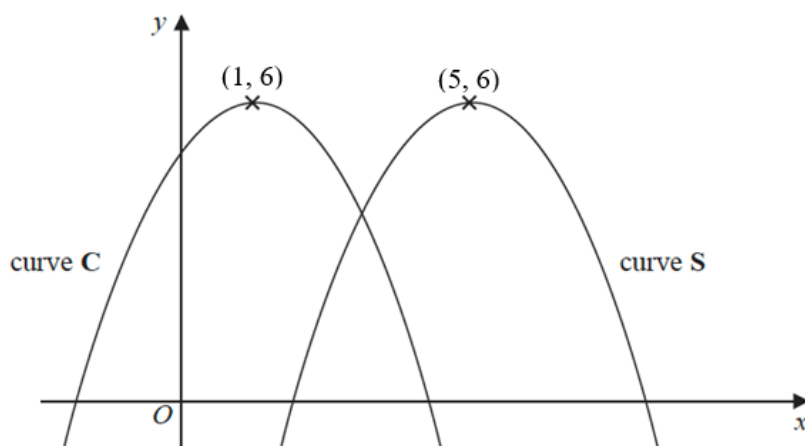
**QUESTION 11**

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  $y = 4 + 3x - x^2$  is transformed by a translation to give the curve **S** such that the point  $(1, 6)$  on **C** is mapped to the point  $(5, 6)$  on **S**.

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

.....  
(2)