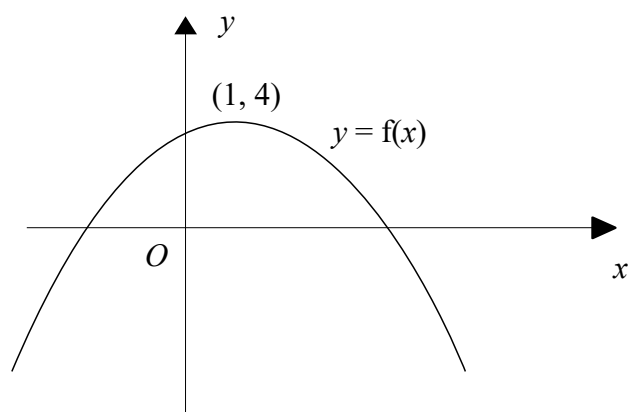


- 1 The graph of $y = f(x)$ is shown below.



The coordinates of the maximum point of this curve are $(1, 4)$.

Write down the coordinates of the turning point of the curve with equation

(a) $y = f(x + 3)$

.....
(1)

(b) $y = -f(x)$

.....
(1)

(c) $y = f(x) - 3$

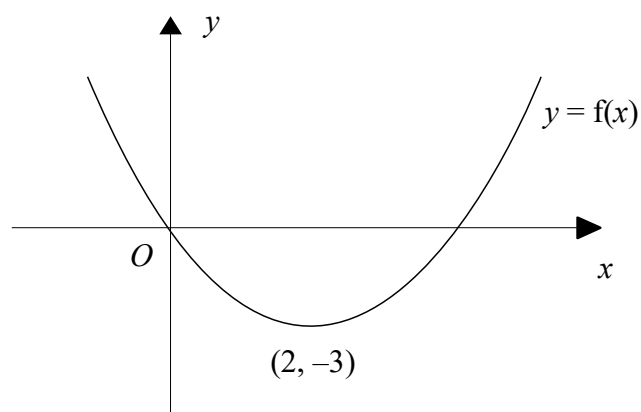
.....
(1)

(d) $y = f(-x)$

.....
(1)

(Total for question 1 is 4 marks)

2 The graph of $y = f(x)$ is shown below.



The coordinates of the minimum point of this curve are $(2, -3)$.

Write down the coordinates of the turning point of the curve with equation

(a) $y = f(x + 2)$

.....
(1)

(b) $y = -f(x)$

.....
(1)

(c) $y = f(x) + 2$

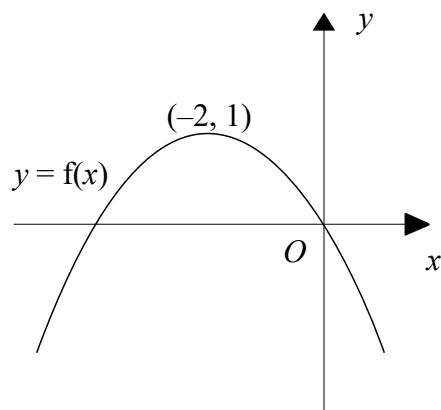
.....
(1)

(d) $y = f(-x)$

.....
(1)

(Total for question 2 is 4 marks)

- 3 The graph of $y = f(x)$ is shown below.



The coordinates of the maximum point of this curve are $(-2, 1)$.

Write down the coordinates of the turning point of the curve with equation

(a) $y = f(x - 3)$

.....
(1)

(b) $y = f(-x)$

.....
(1)

(c) $y = -f(x + 2)$

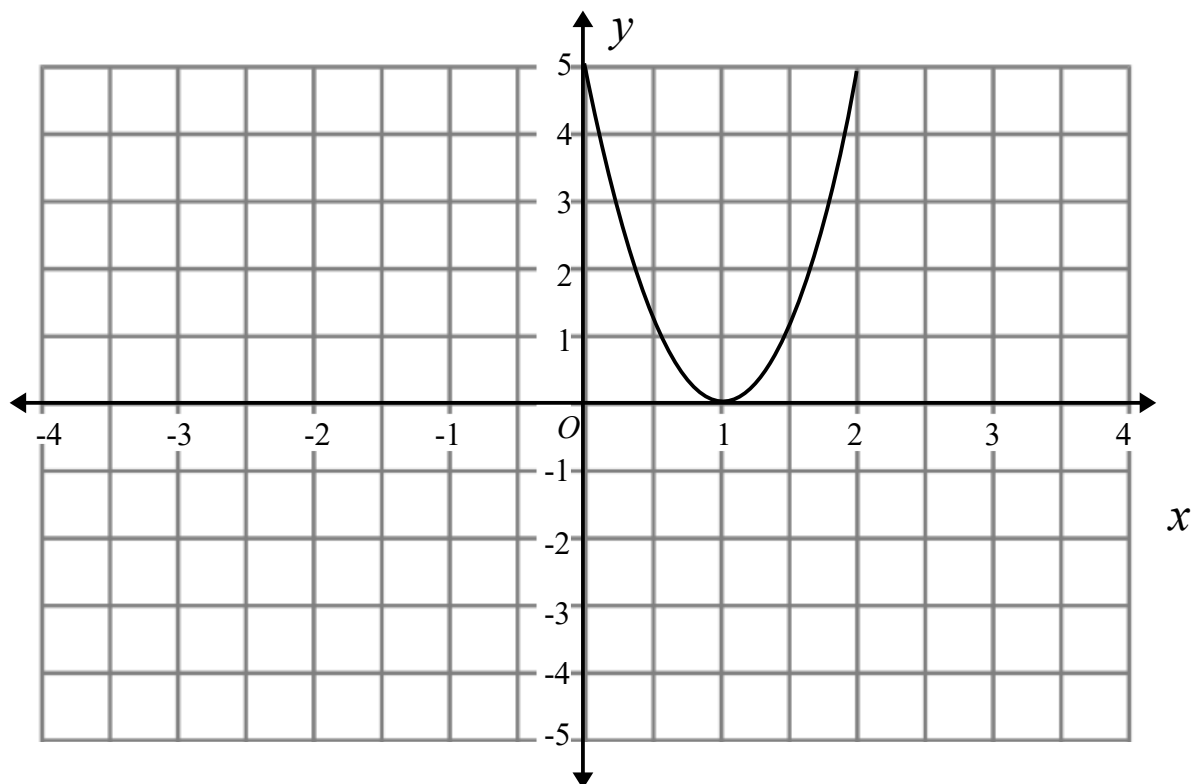
.....
(1)

(d) $y = f(-x) - 1$

.....
(1)

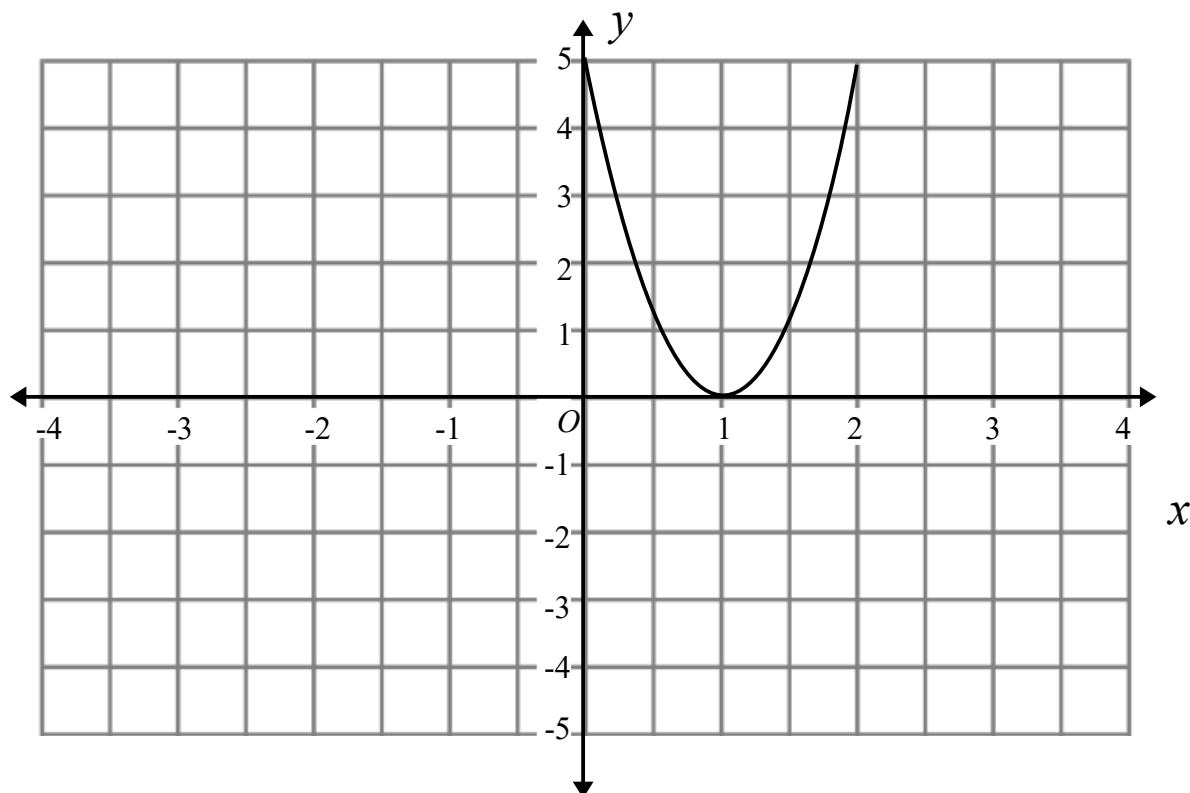
(Total for question 3 is 4 marks)

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



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

(2)

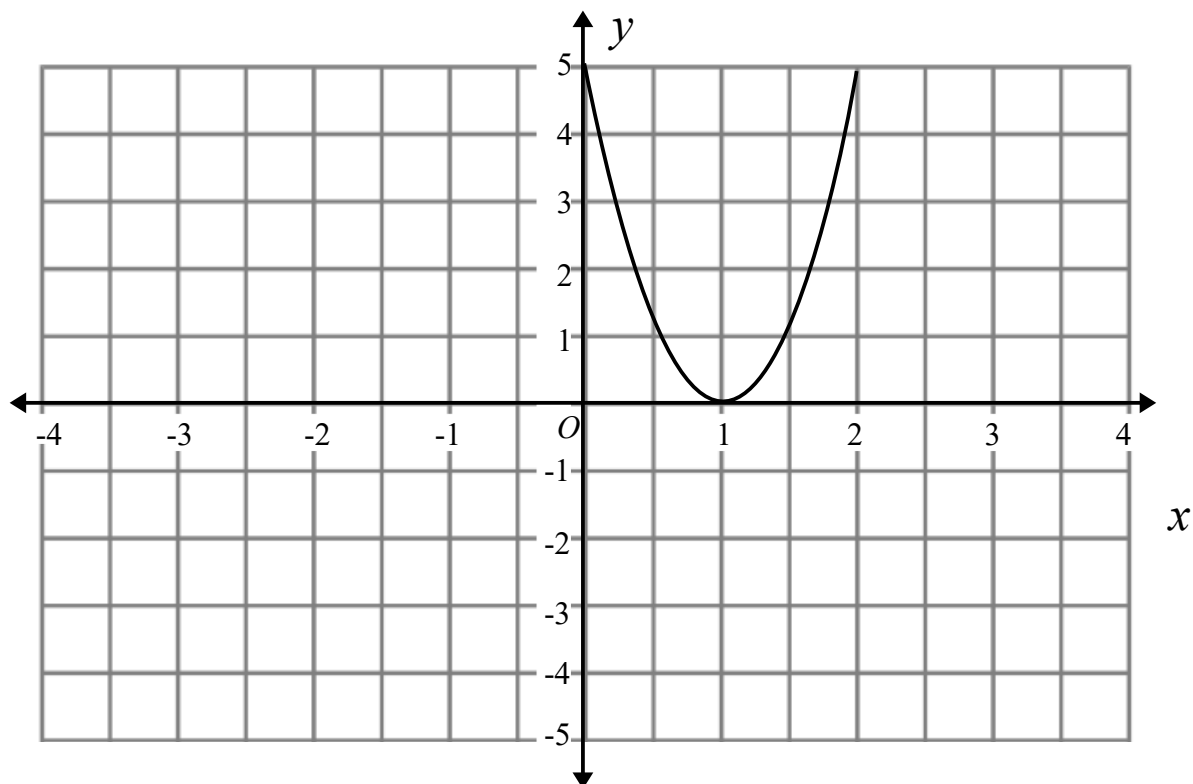


- (b) On the grid above, sketch the graph of $y = f(x + 2)$

(2)

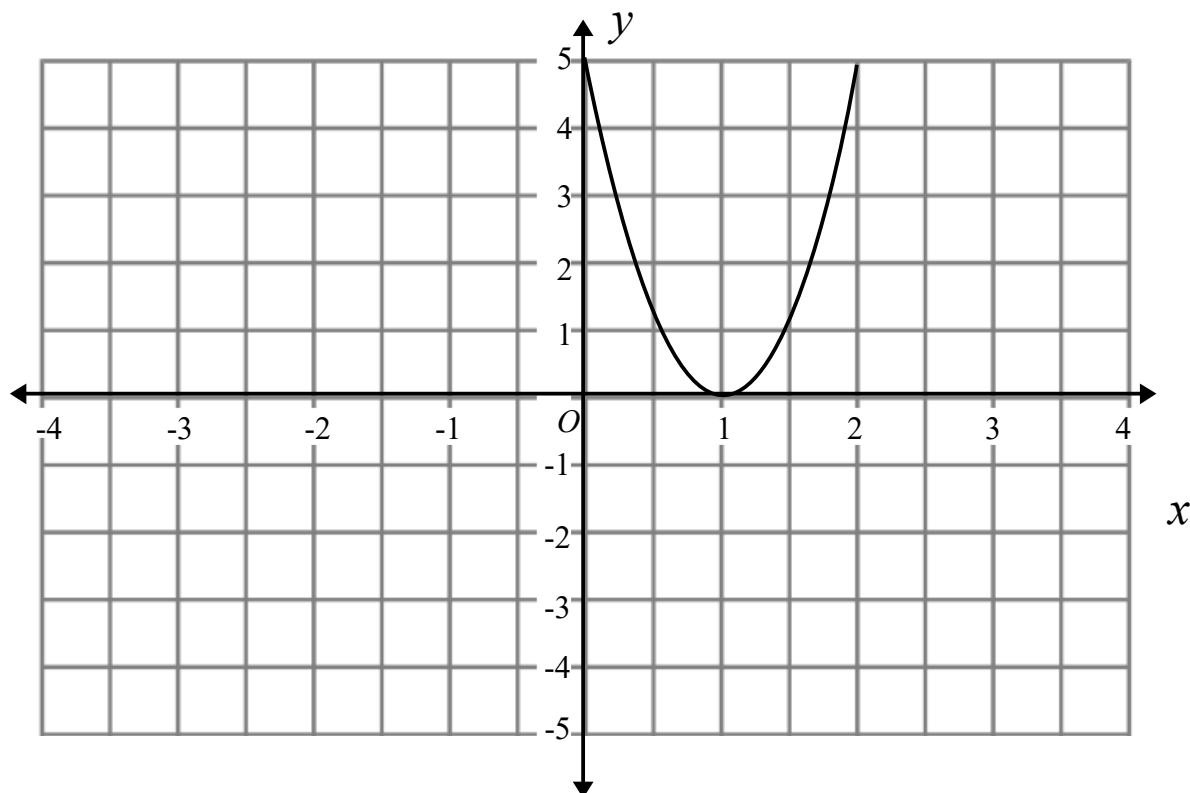
(Total for question 4 is 4 marks)

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



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

(2)

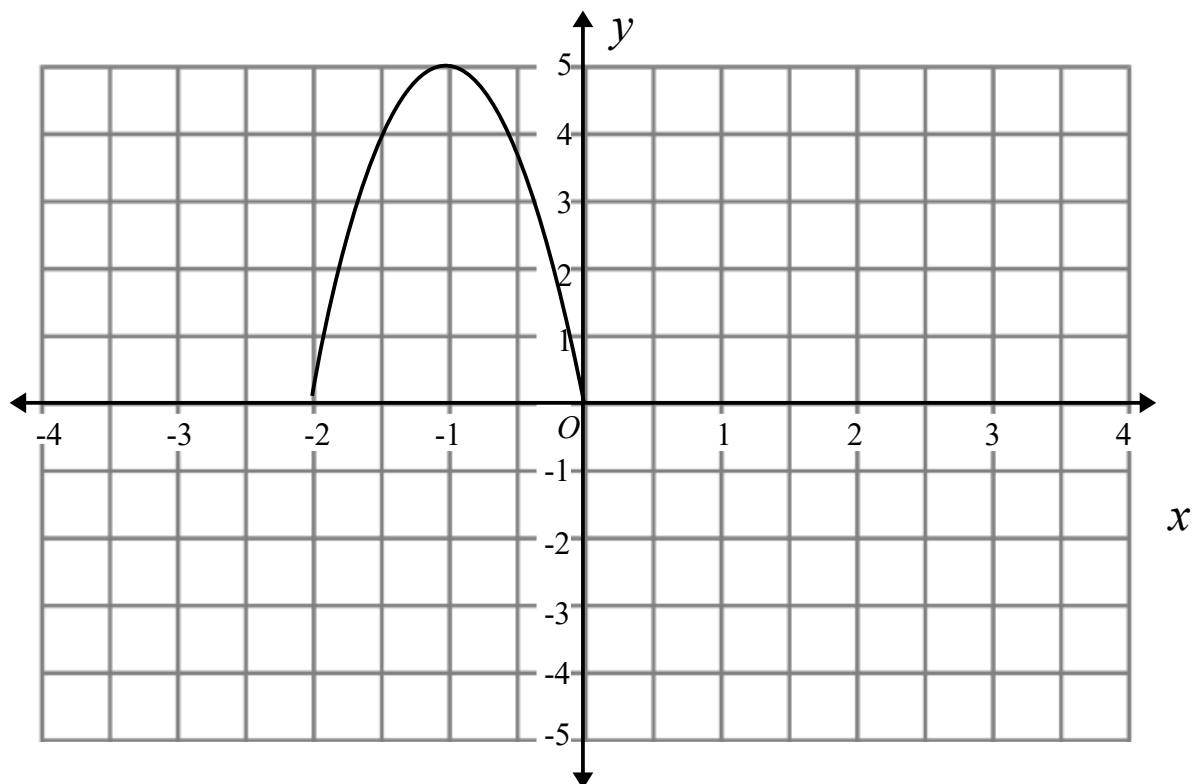


- (b) On the grid above, sketch the graph of $y = f(x) - 2$

(2)

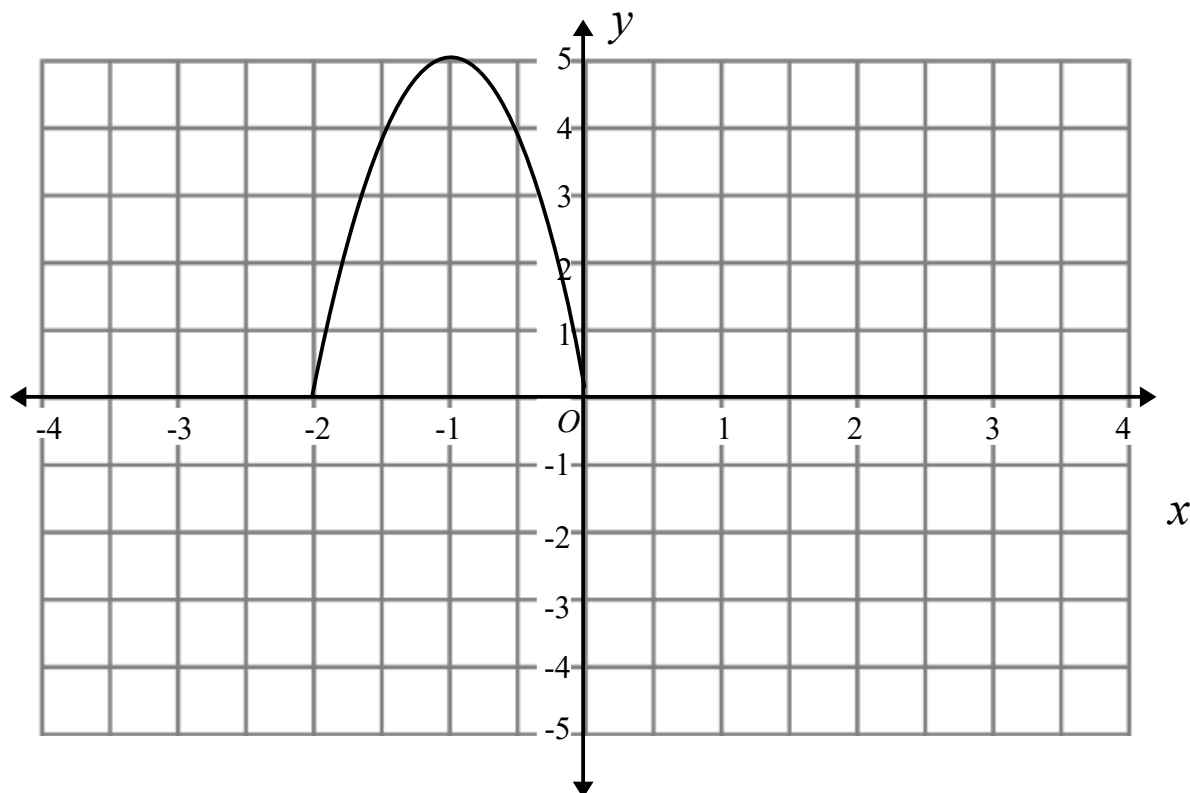
(Total for question 5 is 4 marks)

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



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

(2)

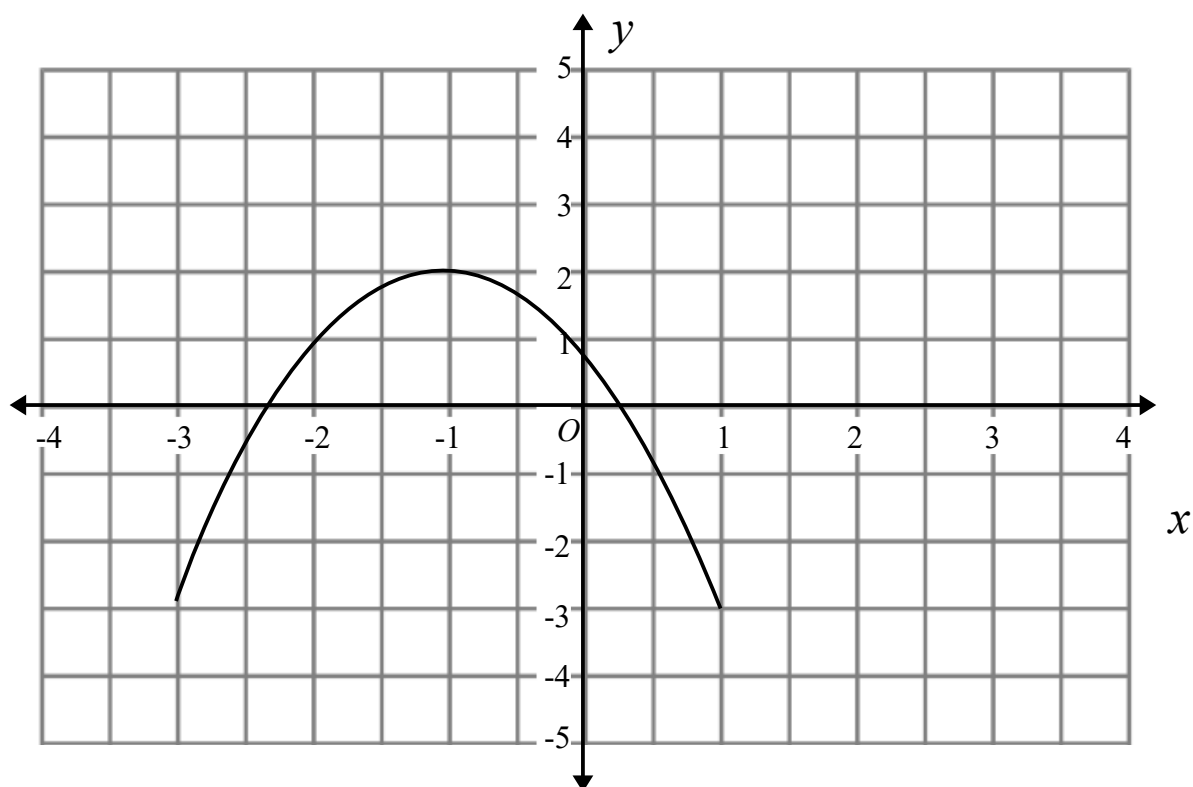


- (b) On the grid above, sketch the graph of $y = f(x - 1)$

(2)

(Total for question 6 is 4 marks)

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



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

(1)

The graph of $y = f(x)$ has a turning point at $(-1, 2)$.

- (b) Write down the coordinates of the turning point of $y = f(-x) + 2$

.....
(1)

(Total for question 7 is 2 marks)