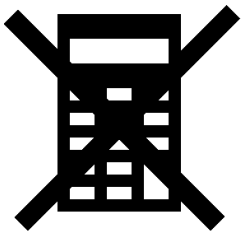
AQA, OCR, Edexcel

GCSE

GCSE Maths

Graph Transformations

Name:



Guidance

1. Read each question carefully.
2. Don't spend too long on each question.
3. Attempt every question.
4. Always show your workings.

Revise GCSE Maths:
www.MathsMadeEasy.co.uk/gcse-maths-revision/

1. For a curve $y = f(x)$, describe the following transformations:

$$f(x-1)$$

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……

……

$$f(x)+7$$

……

……

……

$$f(x-5)+2$$

……

……

……

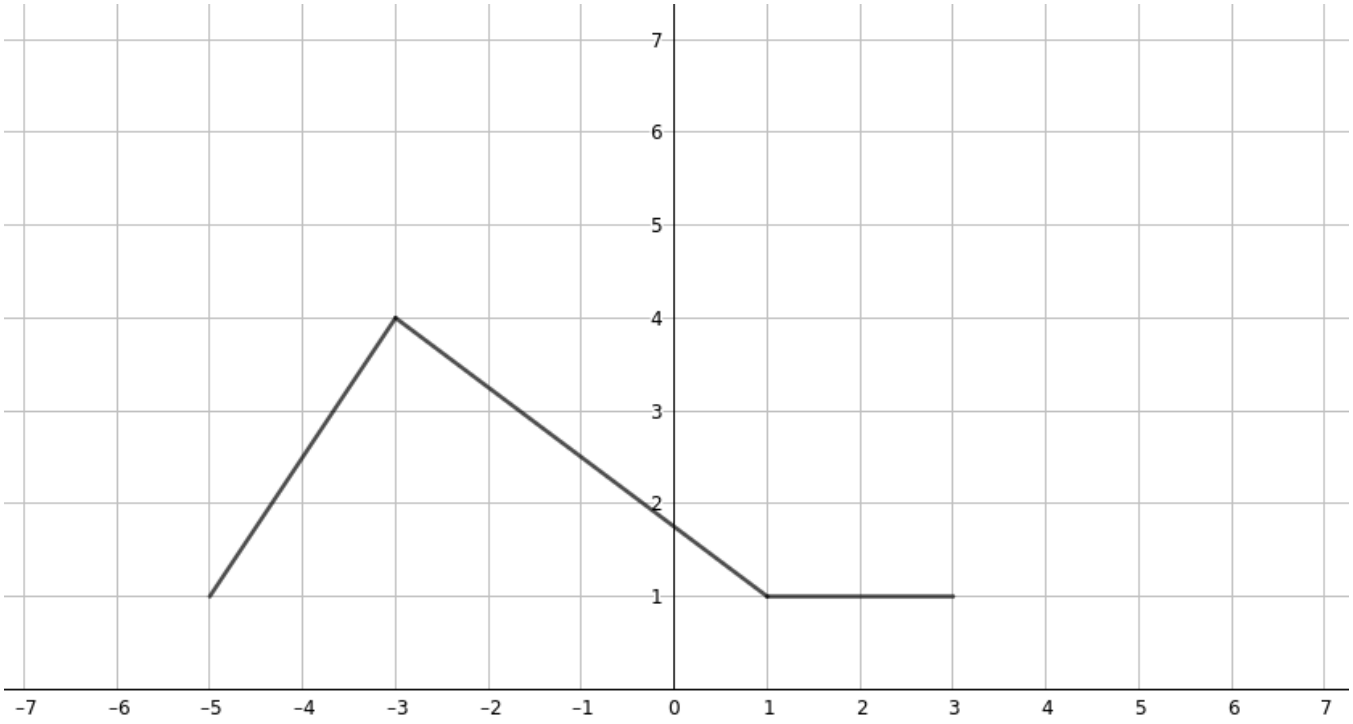
……

(4 marks)

2. The graph of $y = f(x)$ has been drawn below. On the same axes, draw the graphs of:

$$A: f(x) + 2$$
$$B: f(x - 3)$$
$$C: f(x + 1) - 1$$

Label them A, B, and C.



(4 marks)

3. For a curve $y = f(x)$, describe the following transformations:

$$-f(x)$$

.....

.....

.....

$$f(x) + 4$$

.....

.....

.....

$$f(-x)$$

.....

.....

.....

$$f(x - 1) + 2$$

.....

.....

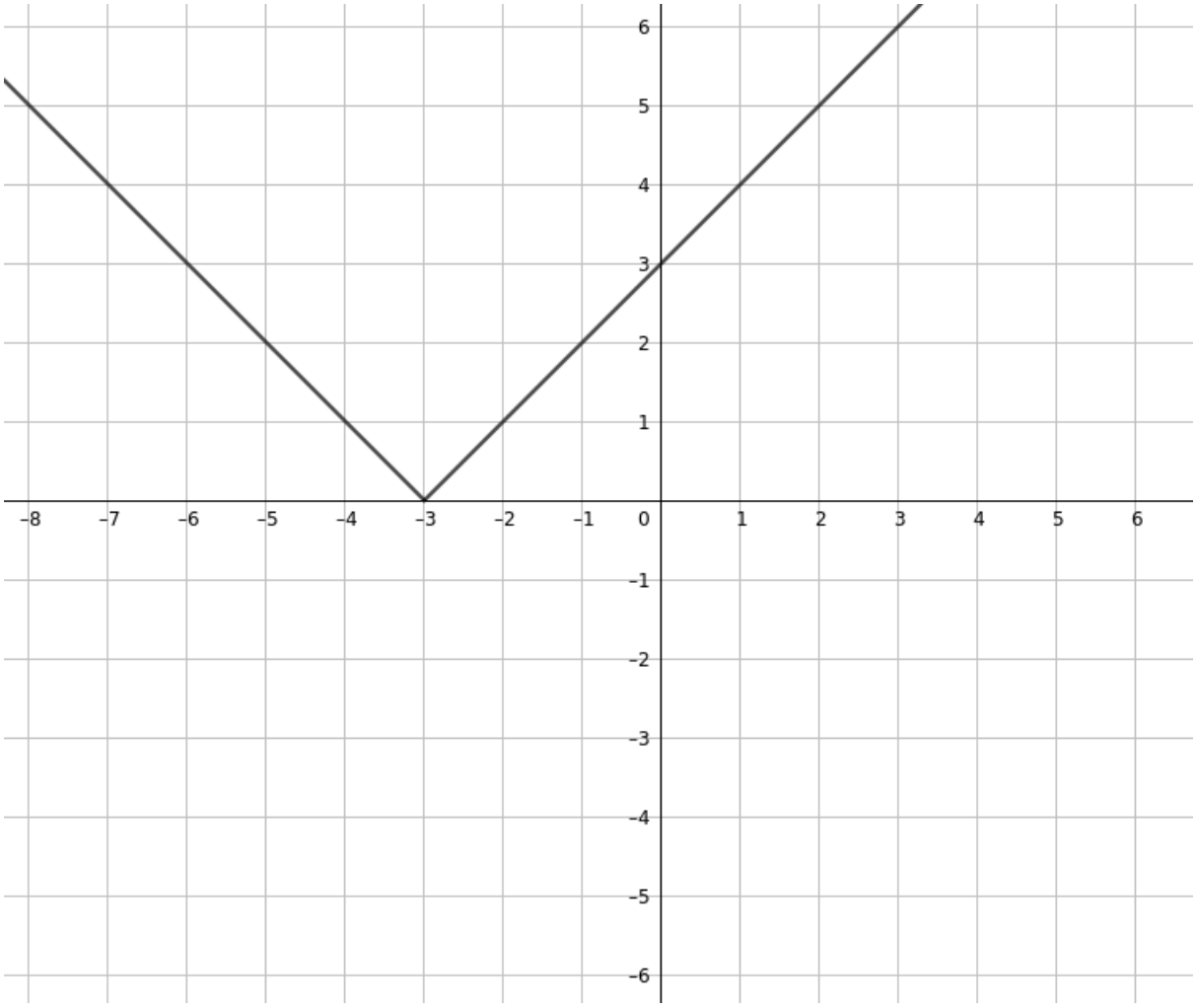
.....

(4 marks)

4. The graph of $y = f(x)$ has been drawn below. On the same axes, draw the graphs of:

$$A \quad f(-x)$$
$$B \quad -f(x)$$
$$C \quad f(x-2)$$

Label them A, B, and C.



Using your graph, find the solution to $f(x) = f(-x)$

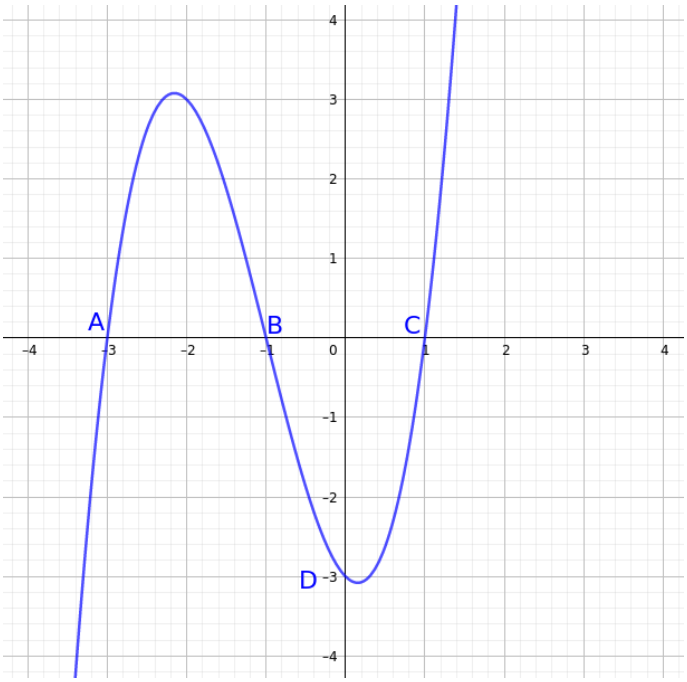
……..

……..

$x = \ldots\ldots\ldots\ldots , y = \ldots\ldots\ldots\ldots$

(3 marks, 1 mark)

5. The graph of $y = f(x)$ has been drawn below.



Write down the new co-ordinates of the points A, B, C, and D under the following transformations:

$-f(x)$

A = ... , ...

B = ... , ...

C = ... , ...

D = ... , ...

$f(x-3)$

A = ... , ...

B = ... , ...

C = ... , ...

D = ... , ...

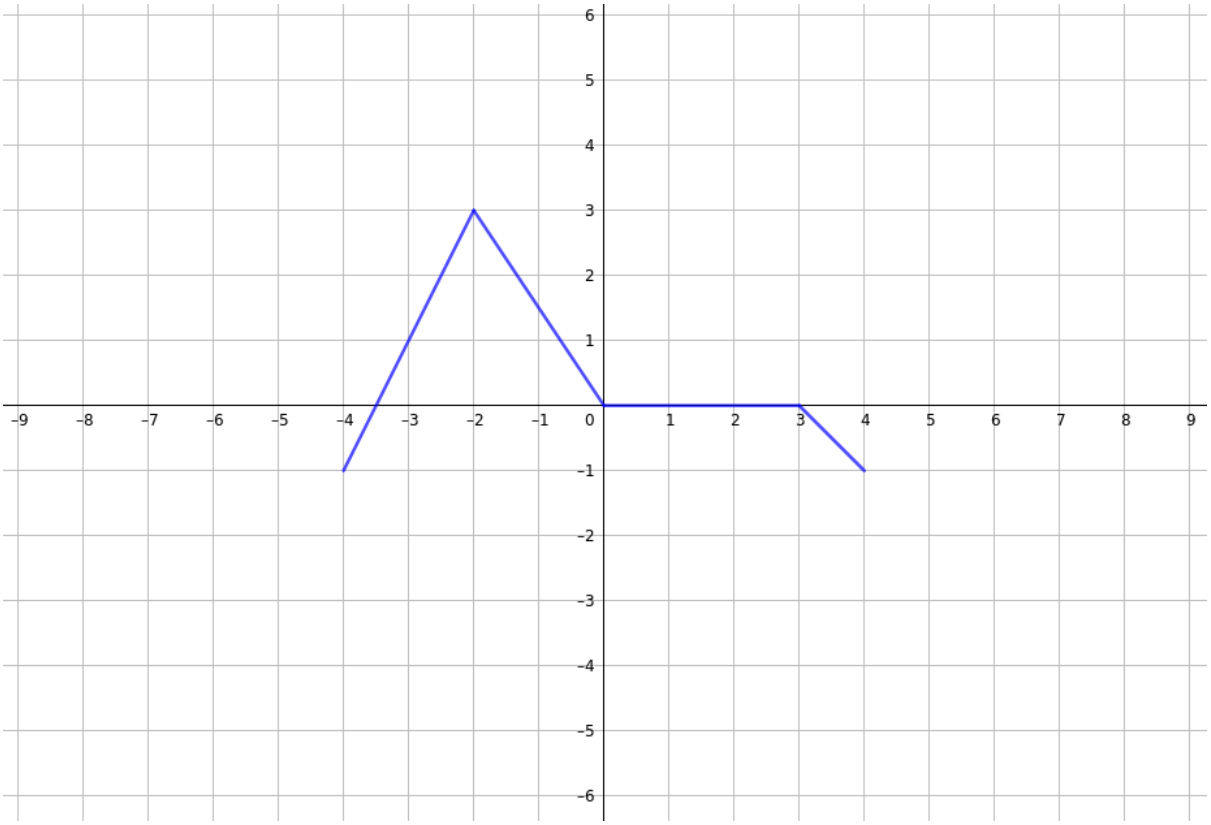
(2 marks, 2 marks, 3 marks)

6. The graph of $y = f(x)$ has been drawn below. One the same axes, draw the graphs of:

$A \quad f(x+3)+3$

$B \quad f(x-4)-3$

Label them A and B.



What transformation(s) need to be made to transform A into B?

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……

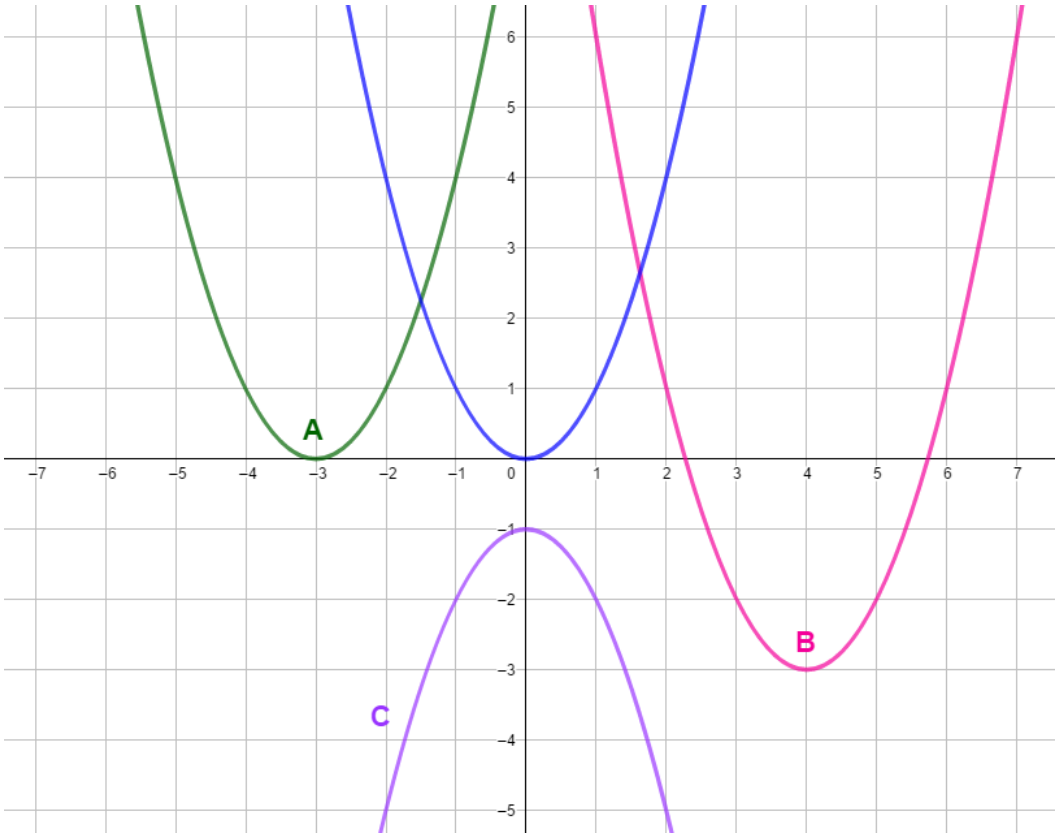
……

……

……

(4 marks, 2 marks)

7. The three graphs marked on the axes below are all transformations of $y = x^2$, marked in blue.



Determine the transformations that have taken place to transform $y = x^2$ into each of the three graphs A, B, and C.

A: ……..

……...

B: ……..

……...

C: ……..

……...

(5 marks)