Bishops Online Tutoring

Education Consultancy

Edexcel GCSE Mathematics TRANSFORMATION OF GRAPHS

Materials Required:

- Pen
- HB Pencil
- Ruler (in centimetres and millimetres)
- Protractor
- Compass

Instructions:

- Use a black ink pen to answer all questions
- Fill your name in the section below
- Answer the questions in the spaces provided
- Show your working out for all answers

Information:

- The marks allocated for each question are displayed within brackets – utilise this information to gauge the appropriate amount of time to dedicate to each question
- Questions marked with an asterisk (*) will assess your written communication; be careful of spelling, punctuation and grammar with these questions

Advice:

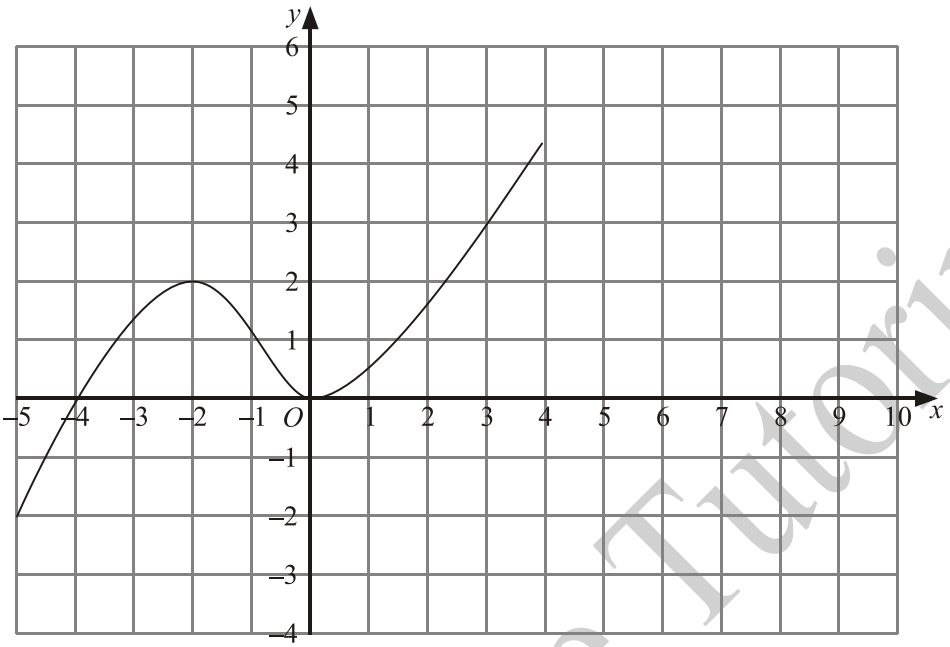
- Carefully read the question before attempting to answer it
- Be vary of time and try to answer every question
- If you have enough time in the end, go back and check your answers. A good way to check your answers is to retry the question with the hope of getting the same answer as before without looking at your working out from before

NO CALCULATOR ALLOWED

NAME:	

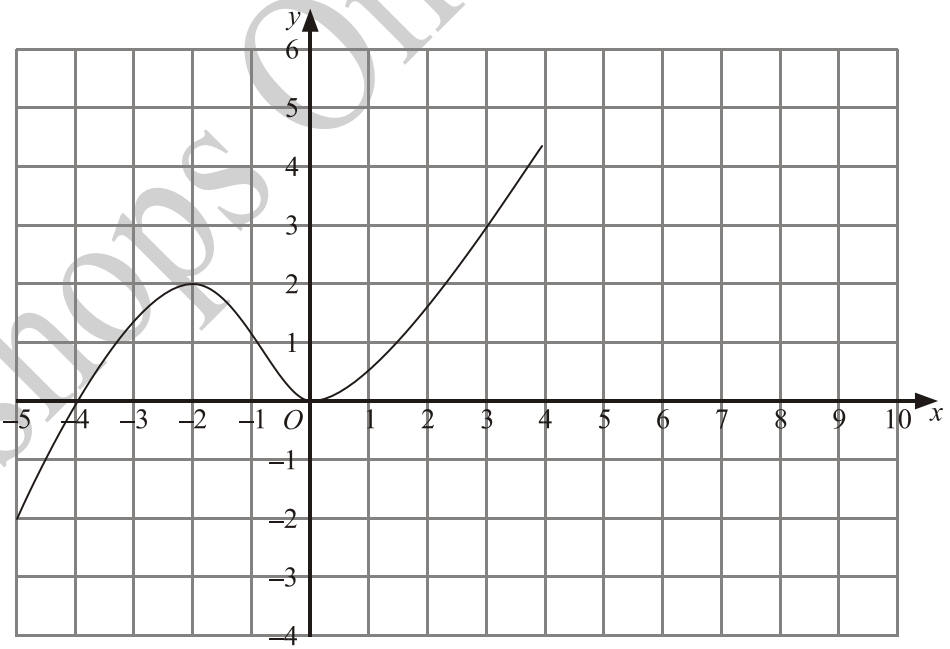
1. The graph of $y = f(x)$ is shown on the grids.

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



(2)

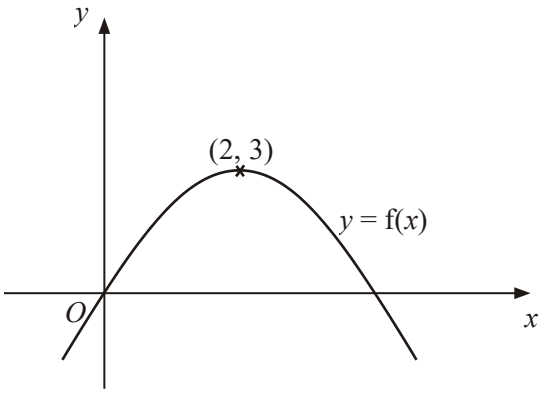
(b) On this grid, sketch the graph of $y = -f(x)$



(2)

(4 marks)

2.



The diagram shows part of the curve with equation $y = f(x)$.
The coordinates of the maximum point of this curve are (2, 3).

Write down the coordinates of the maximum point of the curve with equation (a)

$y = f(x - 2)$

(..... , ...)

(1)

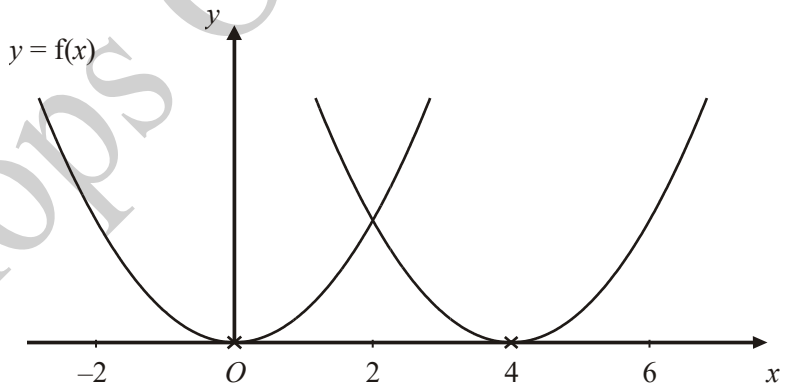
(b) $y = 2f(x)$

(..... , ...)

(1)

(2 marks)

3.



The curve with equation $y = f(x)$ is translated so that the point at (0, 0) is mapped onto the point (4, 0).

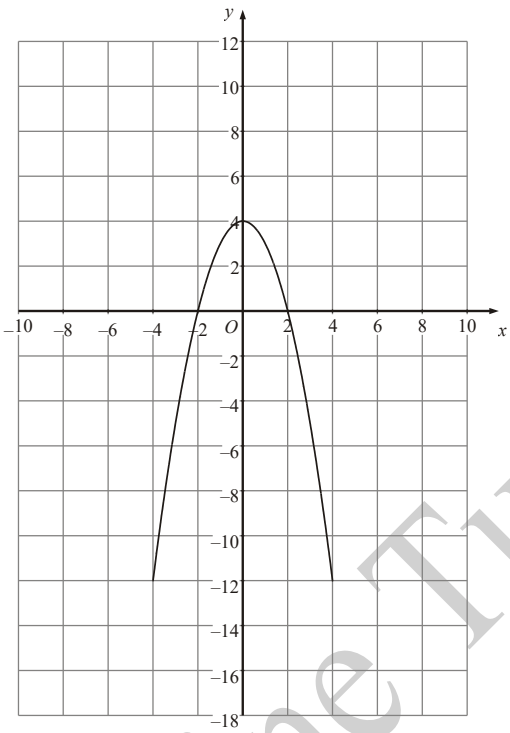
Find an equation of the translated curve.

.....

(2 marks)

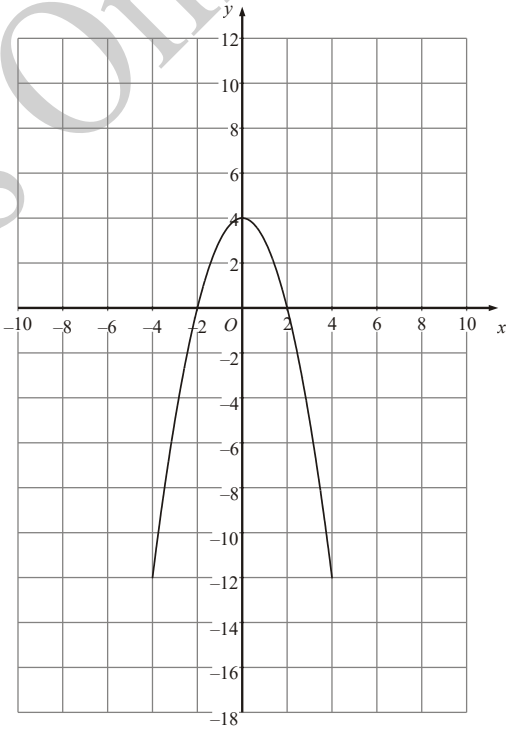
4. The graph of $y = f(x)$ is shown on the grids.

(a) On this grid, sketch the graph of $y = f(x) - 4$



(2)

(b) On this grid, sketch the graph of $y = f(\frac{1}{2}x)$.

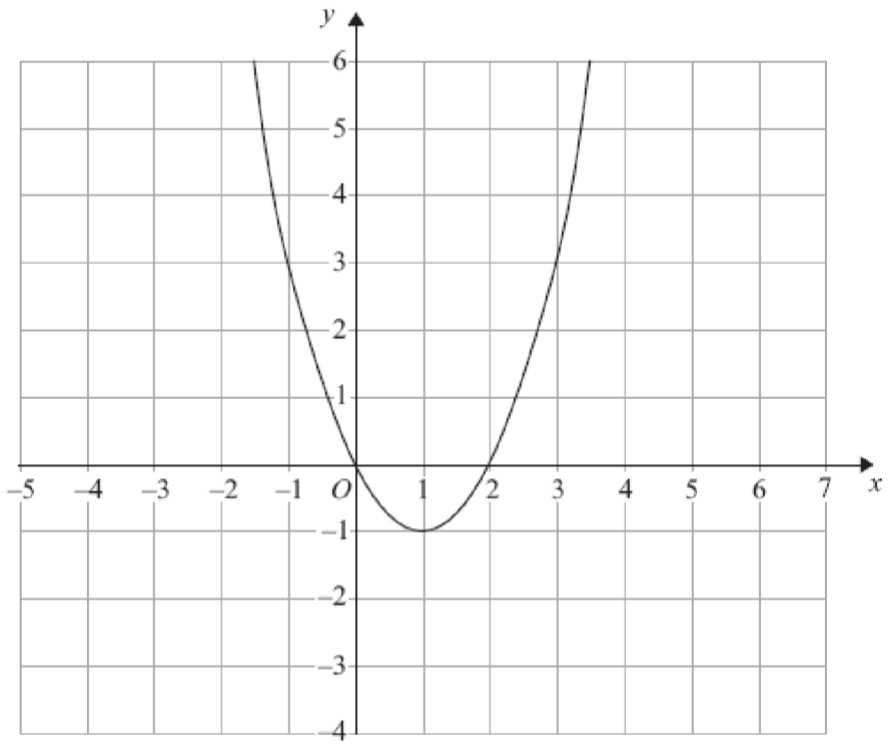


(2)

(4 marks)

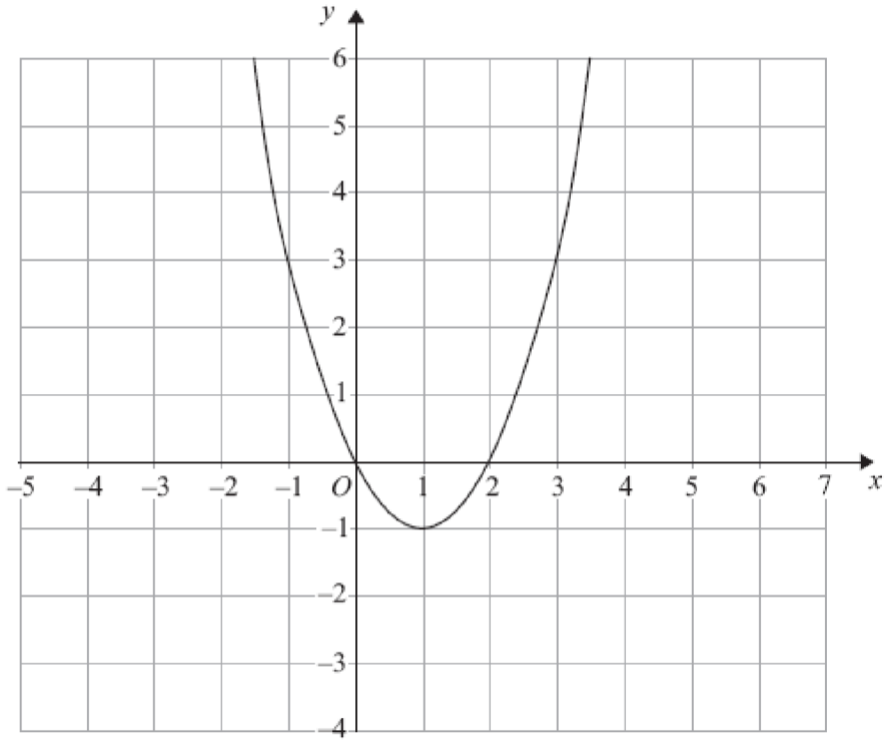
5. The graph of $y = f(x)$ is shown on each of the grids.

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



(2)

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

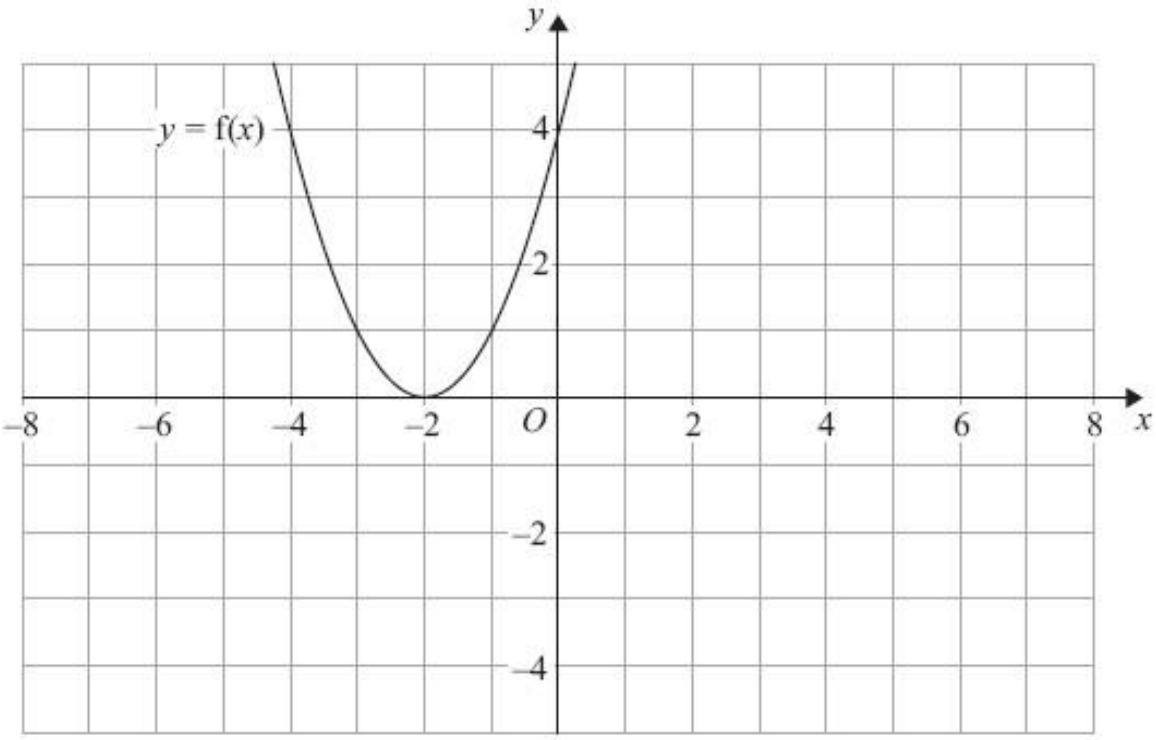


(2)

(4 marks)

6. $y = f(x)$

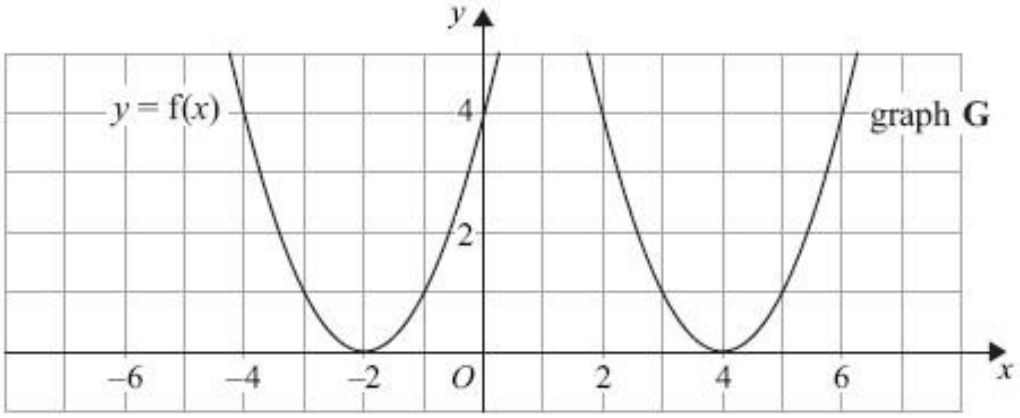
The graph of $y = f(x)$ is shown on the grid.



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

(2)

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



The graph **G** is a translation of the graph of $y = f(x)$.

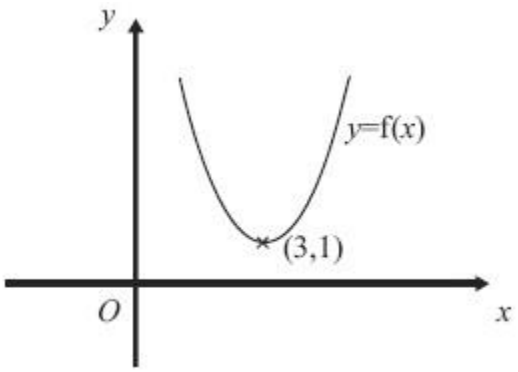
(b) Write down the equation of graph **G**.

.....

(2)

(4 marks)

7.



The diagram shows part of the curve with equation $y = f(x)$.
The coordinates of the minimum point of this curve are (3, 1).

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

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

(1)

(……, ……)

(b) $y = f(x - 2)$

(1)

(……, ……)

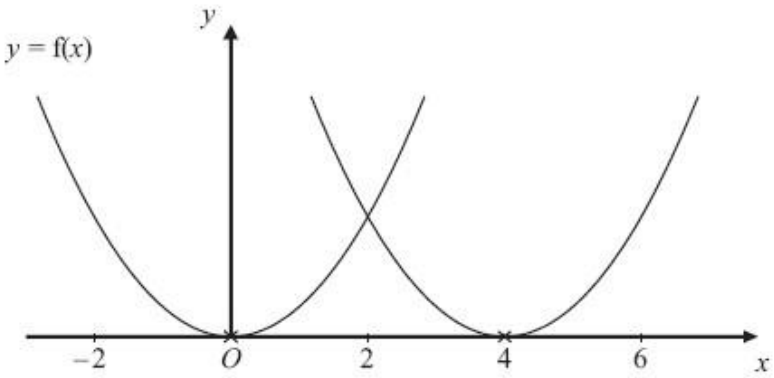
(c) $y = f\left(\frac{1}{2}x\right)$

(1)

(……, ……)

(3 marks)

8.



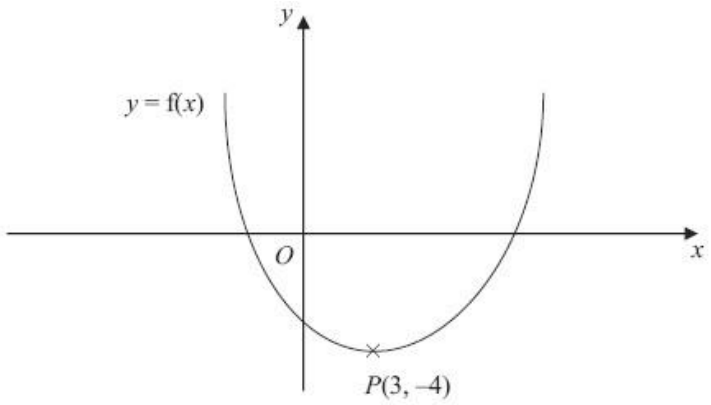
The curve with equation $y = f(x)$ is translated so that the point at (0, 0) is mapped onto the point (4, 0).

Find an equation of the translated curve.

.....

(2 marks)

9. This is a sketch of the curve with the equation $y = f(x)$. The only minimum point of the curve is at $P(3, -4)$.



(a) Write down the coordinates of the minimum point of the curve with the equation $y = f(x - 2)$.

(..... , ...)
(2)

(b) Write down the coordinates of the minimum point of the curve with the equation $y = f(x + 5) + 6$

(..... , ...)
(2)

(4 marks)