



EXAM PAPERS PRACTICE

GCSE Edexcel Math

1MA1

Transformation of Graph

Answers

*"We will help you to
achieve A Star "*



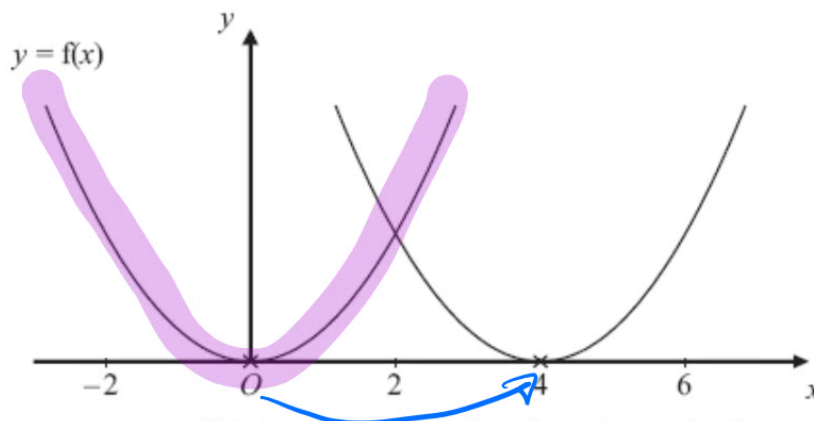
Answer 1

The curve with equation $y = f(x)$ is transformed to give the curve with equation $y = f(x) - 4$

(b) Describe the transformation.

TRANSLATION BY -4 UNITS IN y DIRECTION

Answer 2



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.

TRANSLATION $+4$ UNITS
IN x DIRECTION

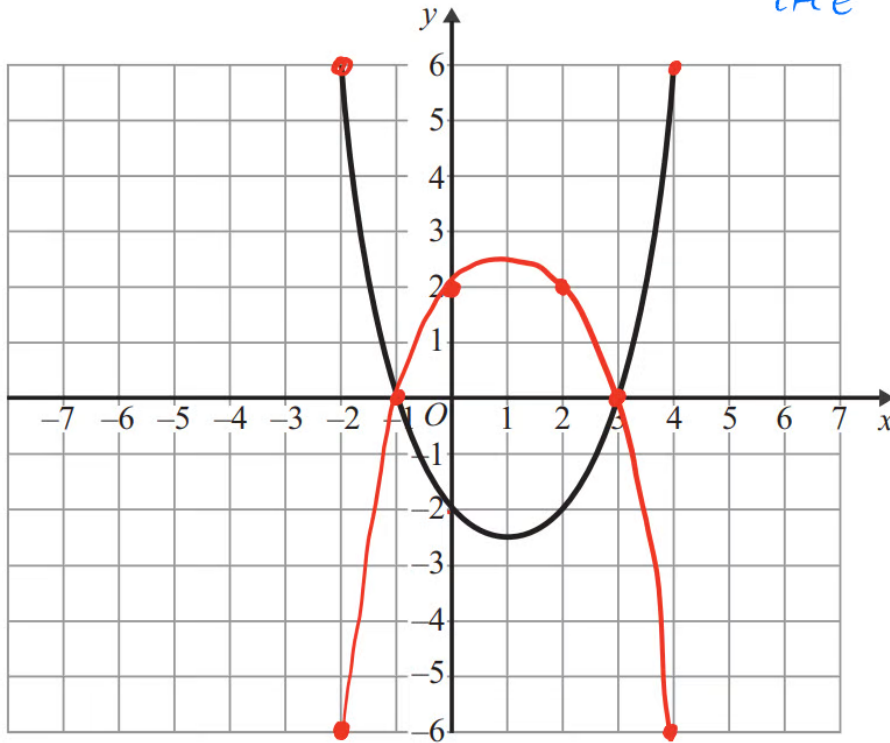
$$\underline{y = f(x - 4)}$$



Answer 3

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

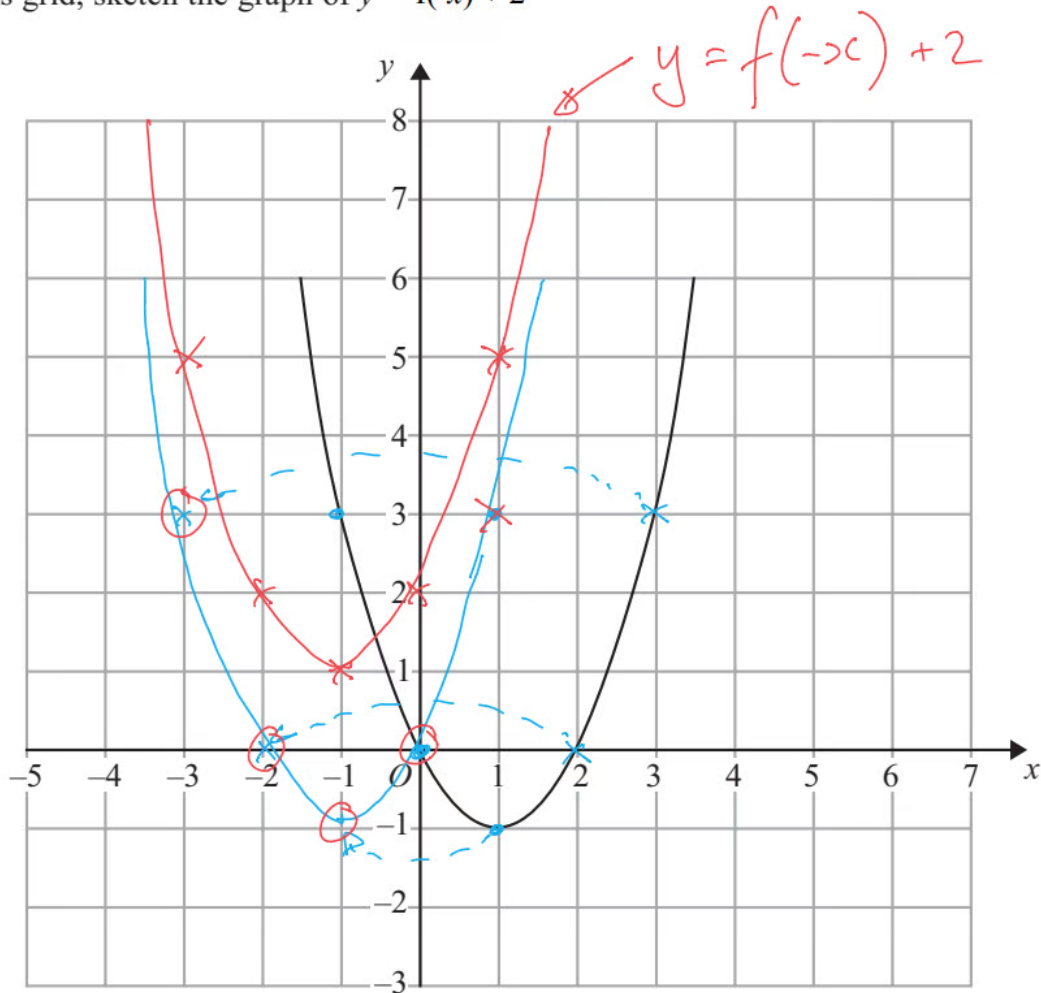
REFLECTION IN THE x AXIS





Answer 4

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



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



REFLECTION

IN y -AXIS



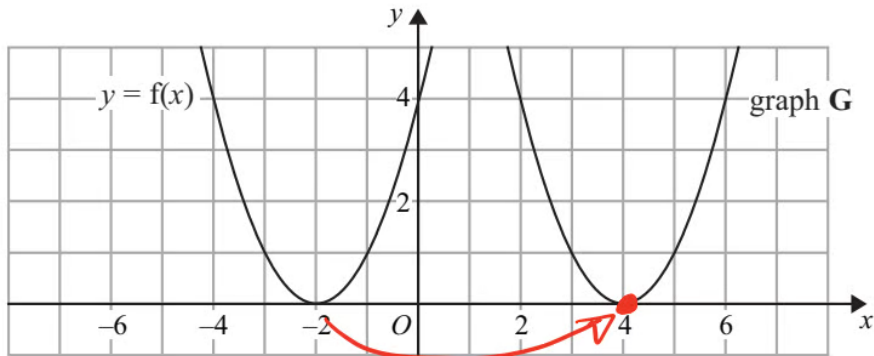
TRANSLATION +2 UNITS

IN y -DIRECTION



Answer 5

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**.

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

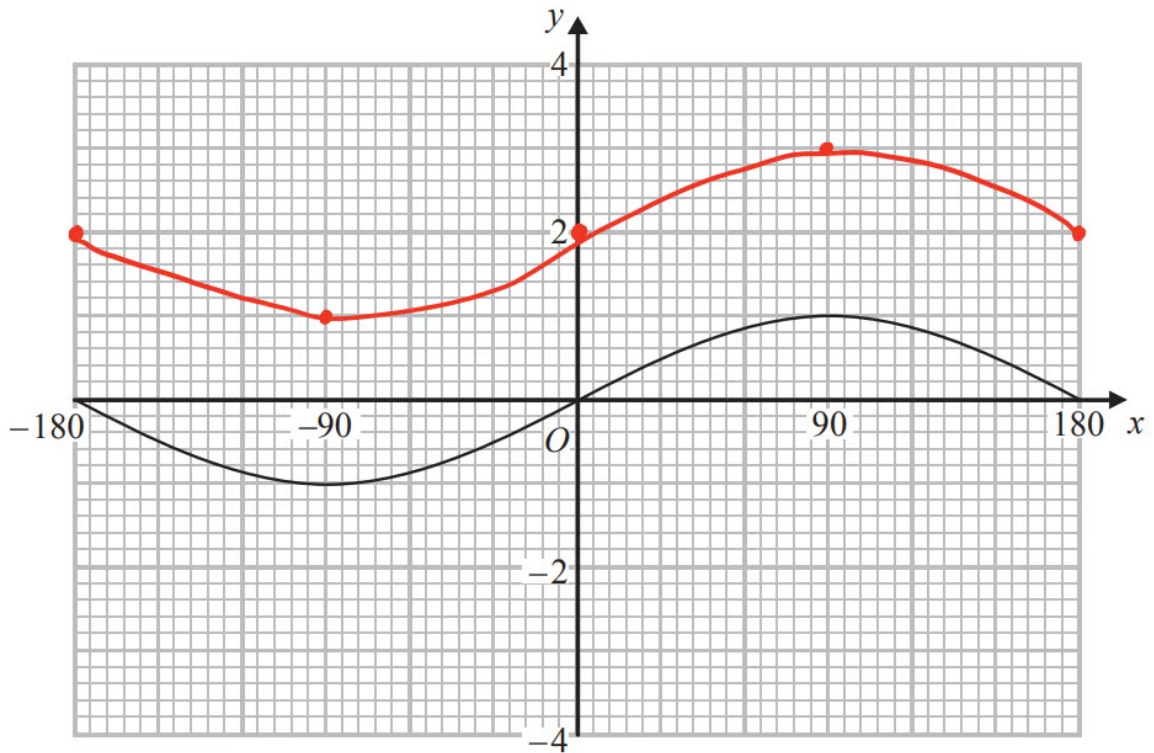
+a
→

$$y = f(x - 6)$$



Answer 6

Here is the graph of $y = \sin x^\circ$ for $-180 \leq x \leq 180$



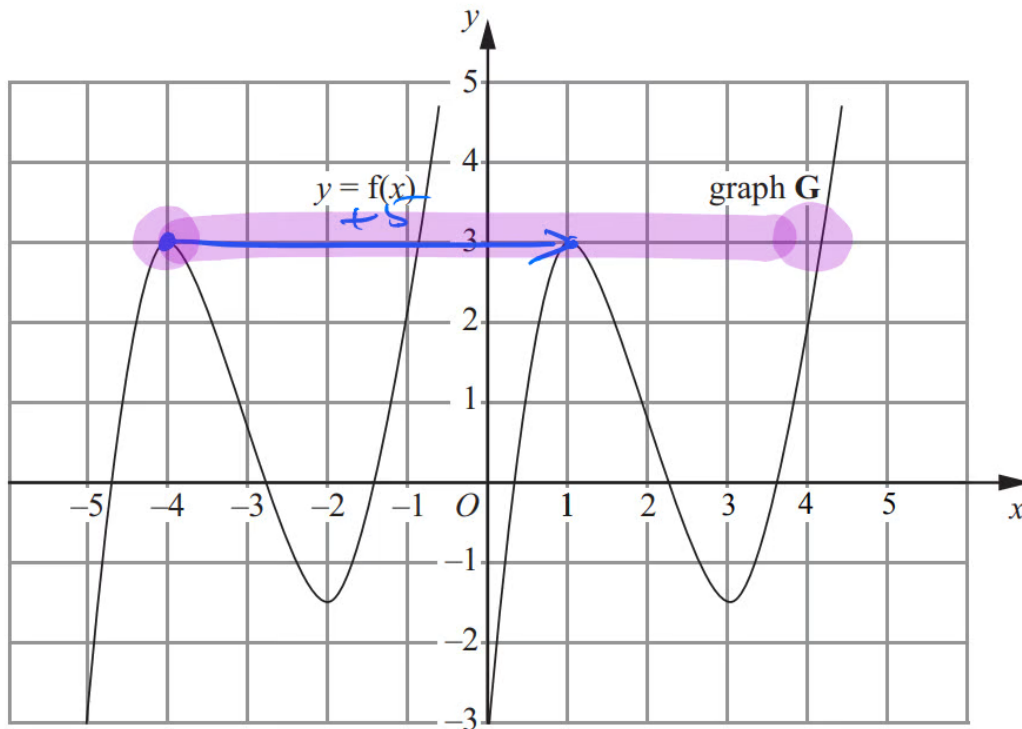
(a) On the grid above, sketch the graph of $y = \sin x^\circ + 2$ for $-180 \leq x \leq 180$

↳ TRANSLATION
UP 2 UNITS



Answer 7

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



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

- (a) Write down, in terms of f , the equation of graph **G**.

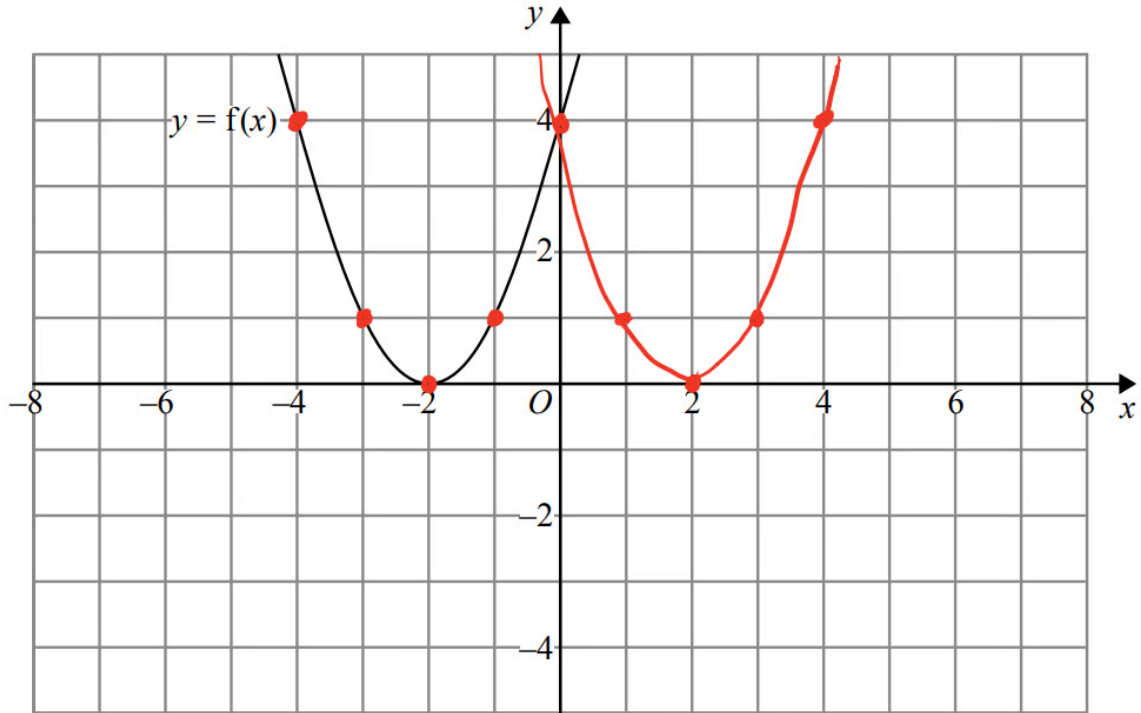
TRANSLATION, +5 UNITS IN x -DIRECTION

$y = f(x - 5)$



Answer 8

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



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

REFLECTION IN y-AXIS

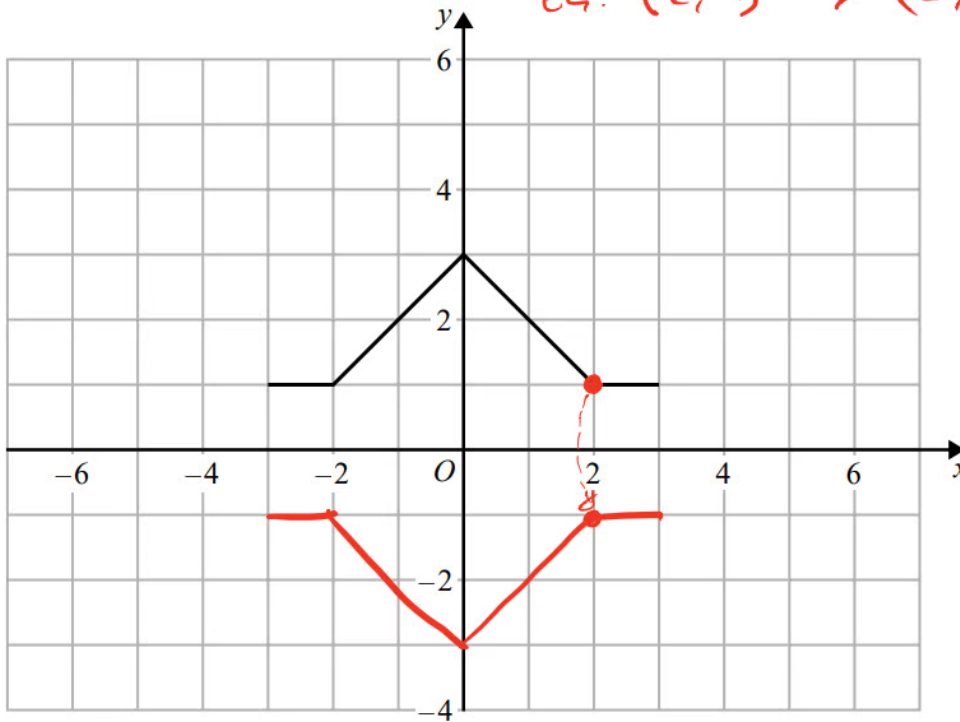


Answer 9

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

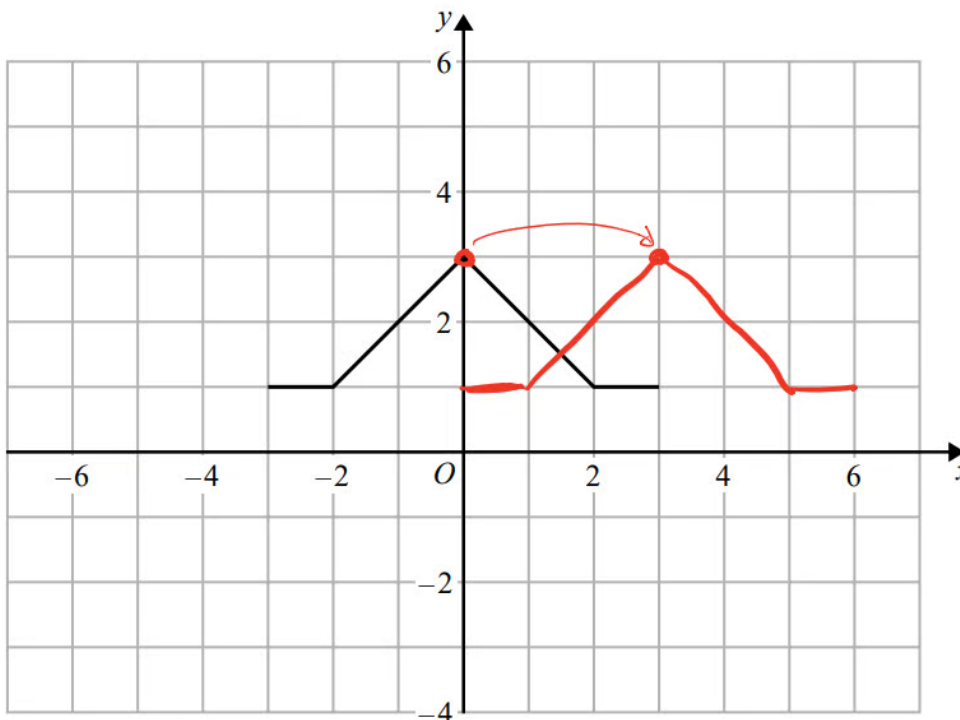
(i) On this grid, draw the graph of $y = -f(x)$

REFLECTION IN x AXIS
EG. $(2, 1) \rightarrow (2, -1)$



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

TRANSLATION BY 3 UNITS IN x DIRECTION





Answer 10

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

TRANSLATION BY -5 UNITS IN x DIRECTION
BY +6 UNITS IN y DIRECTION

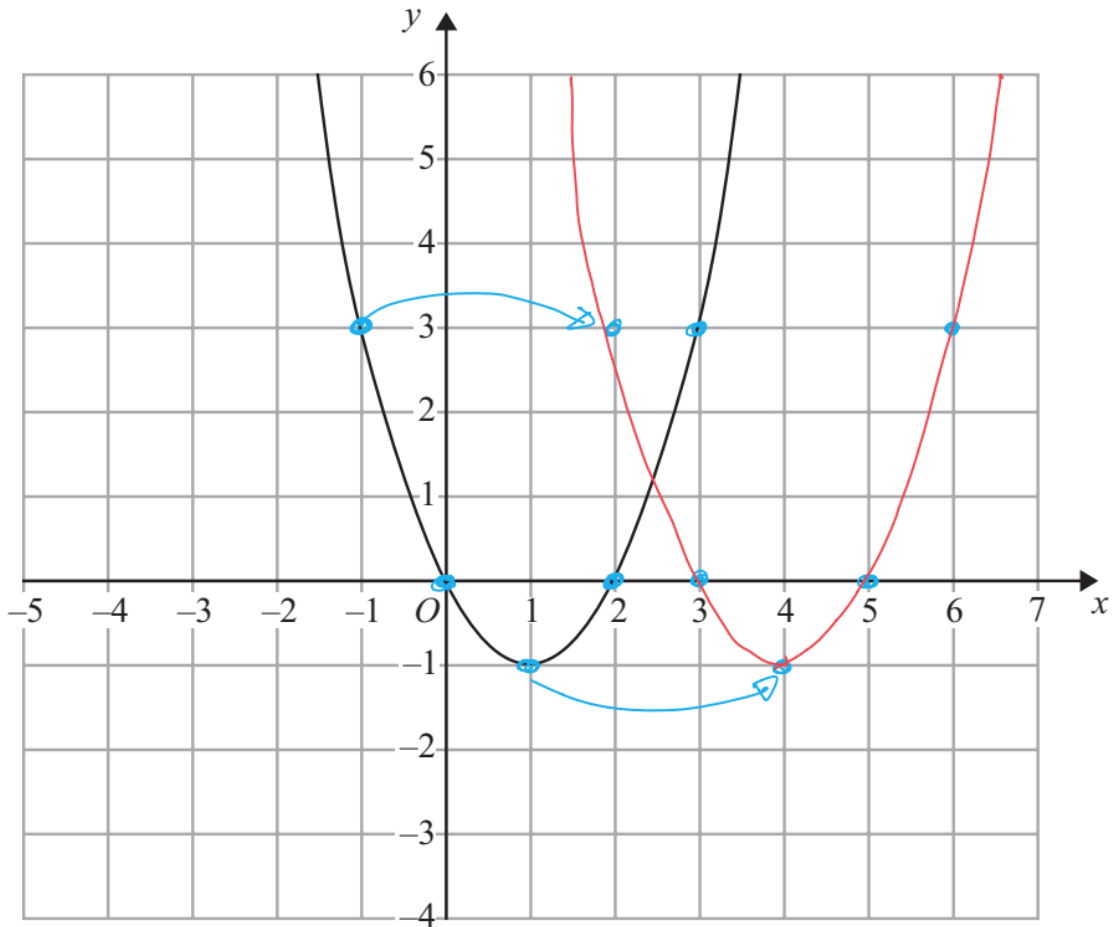
$(-2, 2)$



Answer 11

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

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



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

TRANSLATION + 3 UNITS

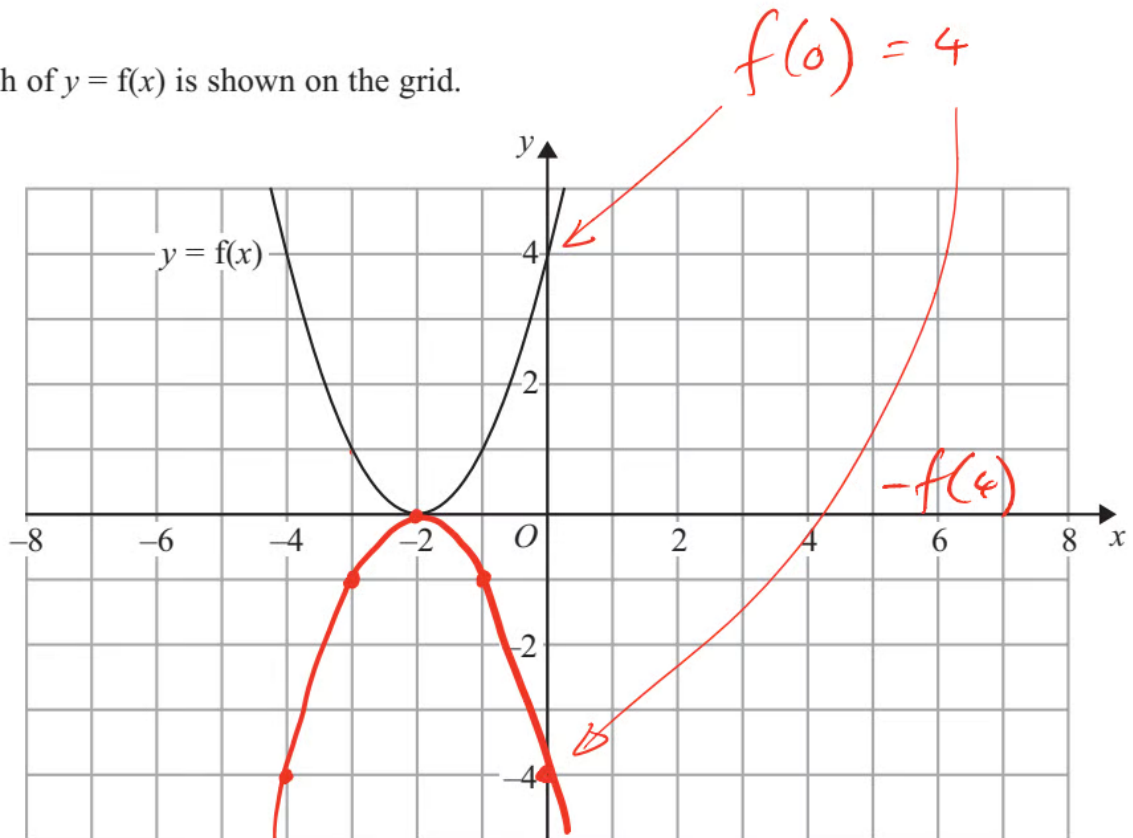
IN x - DIRECTION



Answer 12

$y = f(x)$

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

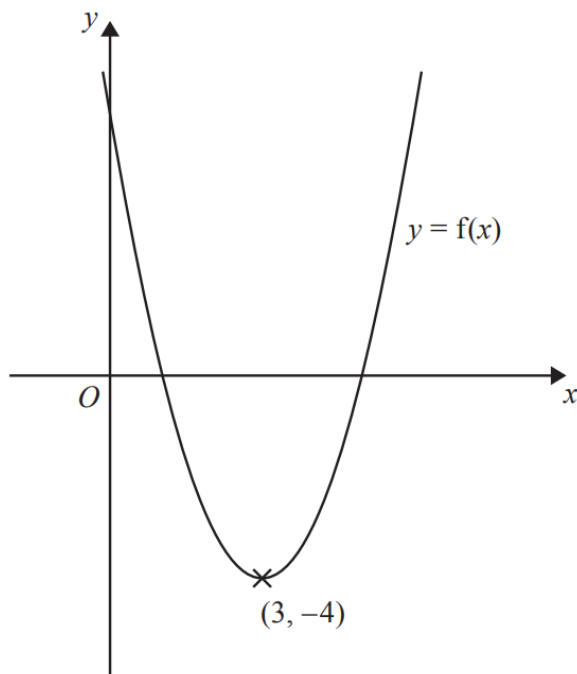


(a) On the grid above, sketch the graph of $y = -f(x)$.

REFLECTION IN x -AXIS



Answer 13



The diagram shows part of the curve with equation $y = f(x)$.
The coordinates of the minimum point of this curve are $(3, -4)$

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

(i) $y = f(x) + 3$ TRANSLATION +3 UNITS IN y -DIRECTION
(3, -1)

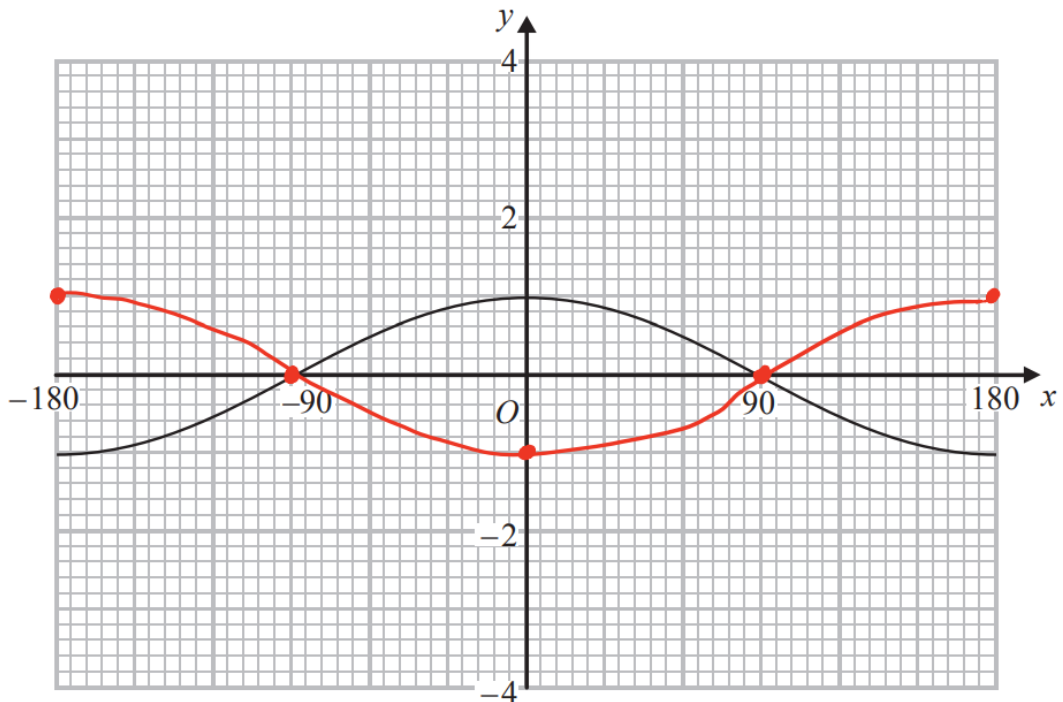
(ii) $y = f(x + 2)$ TRANSLATION -2 UNITS IN x -DIRECTION
(1, -4)

(iii) $y = f(-x)$ REFLECTION IN y -AXIS
(-3, -4)



Answer 14

Here is the graph of $y = \cos x^\circ$ for $-180 \leq x \leq 180$



(b) On the grid above, sketch the graph of $y = -\cos x^\circ$ for $-180 \leq x \leq 180$

↳ REFLECTION IN x AXIS



Answer 15

The graph of $y = f(x)$ has a maximum point at $(-4, 3)$.

(b) Write down the coordinates of the maximum point of the graph of $y = f(-x)$.

REFLECTION IN y -AXIS

(4, 3)