THIRD SPACE LEARNING

GCSE Exam Questions

Quadratic Graphs | Algebra

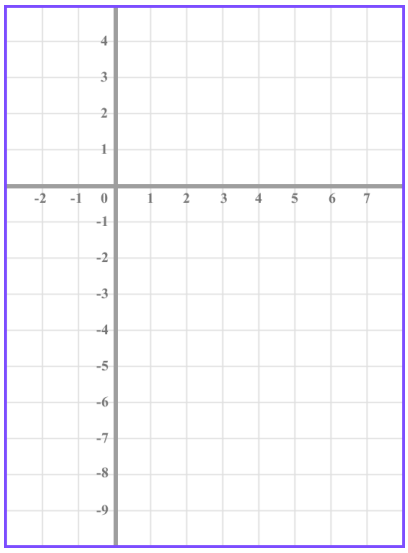
GCSE Exam Questions: Quadratic Graphs

1) **(a)** Complete the table of values for $y = x^2 - 5x - 2$

x	-1	0	1	2	3	4	5	6
y			-6				-2	

(2)

(b) On the grid draw the graph of $y = x^2 - 5x - 2$ for values of x from - 1 to 6.



(2)

(c) Use the graph to find estimates of the solutions to the equation:

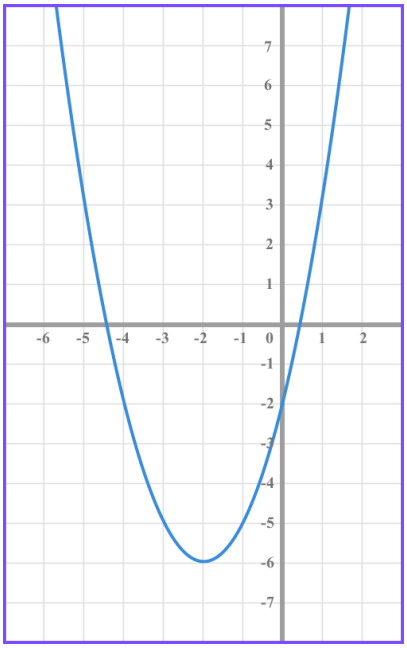
$$-4 = x^2 - 5x - 2$$

(2)

(6 marks)

GCSE Exam Questions: Quadratic Graphs

2) Here is the graph of $y = x^2 + 4x - 2$.



(a) Write down the turning point of the graph $y = x^2 + 4x - 2$.

(1)

(b) Use the graph to find approximate roots of the equation

$5 = x^2 + 4x - 2$

(2)

(c) Use the graph to find approximate solutions of the equation

$x^2 + 4x + 3 = 5$

(2)

(5 marks)

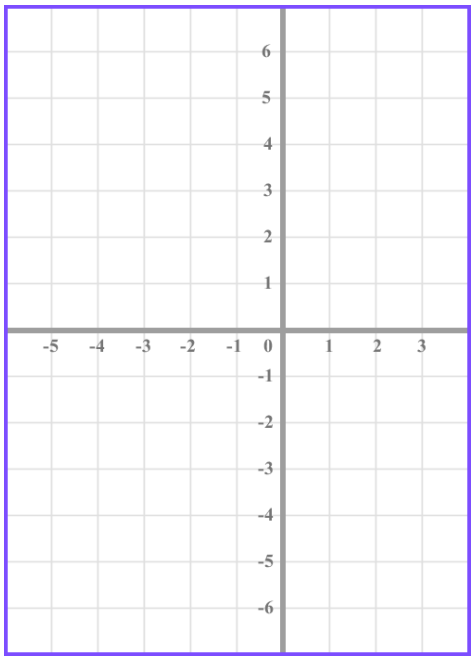
GCSE Exam Questions: Quadratic Graphs

3) **(a)** Complete the table of values for $y = 3 - 2x - x^2$

x	-4	-3	-2	-1	0	1	2
y			3			0	

(2)

(b) Draw the graph of $y = 3 - 2x - x^2$ for values of x from - 4 to 2.



(2)

(c) Use the graph to find estimates of the solutions to the equation $3 - 2x = x^2$

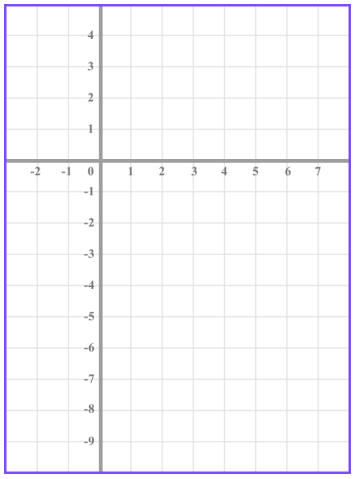
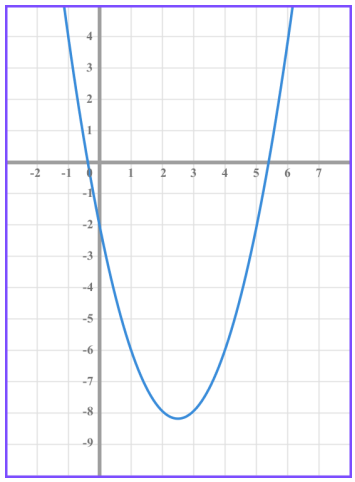
(2)

(d) Use the graph to find the coordinates of the turning point of the graph $y = 3 - 2x - x^2$.

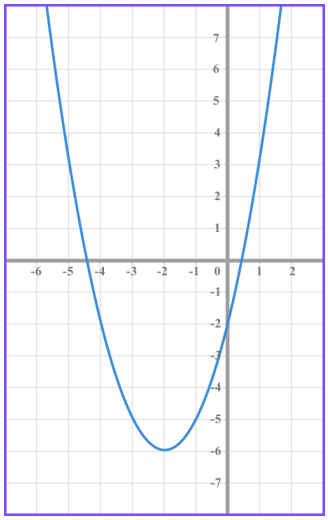
(1)

(7 marks)

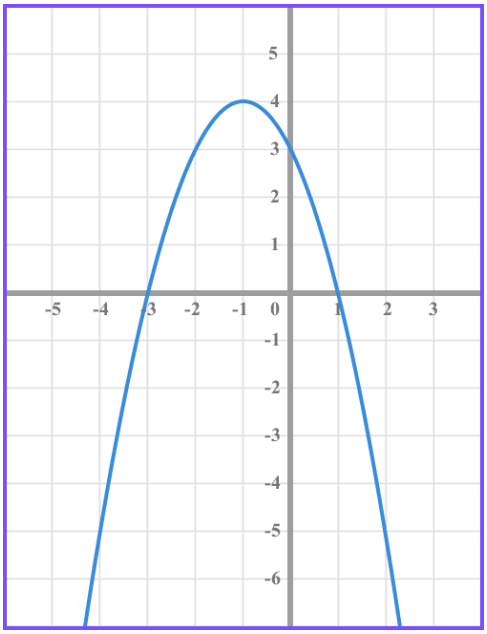
GCSE Exam Questions: Quadratic Graphs Answers

	Question	Answer	Marks
1) (a)	Complete the table of values for $y = x^2 - 5x - 2$ x | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 y | | | -6 | | | | -2 |	**(a)** x | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 y | 4 | -2 | -6 | -8 | -8 | -6 | -2 | 4 4 or 5 correct values All correct values	**(1)** **(1)**
(b)	On the grid draw the graph of $y = x^2 - 5x - 2$ for values of x from - 1 to 6. 	**(b)**  Points plotted correctly ft. pt (a) Points joined with a smooth curve	**(1)** **(1)**
(c)	Use the graph to find estimates of the solutions to the equation: $-4 = x^2 - 5x - 2$	**(c)** Line $y = -4$ drawn on graph $x = 0.4 \pm 0.1 \; and \; x = 4.6 \pm 0.1$	**(1)** **(1)**

GCSE Exam Questions: Quadratic Graphs Answers

	Question	Answer	Marks
2)	Here is the graph of $y = x^2 + 4x - 2$. 		
(a)	Write down the turning point of the graph $y = x^2 + 4x - 2$.	**(a)** (- 2, - 6)	**(1)**
(b)	Use the graph to find approximate roots of the equation $5 = x^2 + 4x - 2$	**(b)** Line $y = 5$ drawn on graph $x = 1.3 \pm 0.1, x = -5.3 \pm 0.1$	**(1)** **(1)**
(c)	Use the graph to find approximate solutions of the equation $x^2 + 4x + 3 = 5$	**(c)** Line $y = 0$ drawn on graph $x = 0.4 \pm 0.1, x = -4.4 \pm 0.1$	**(1)** **(1)**

GCSE Exam Questions: Quadratic Graphs Answers

<table>
<tr><th></th><th>Question</th><th>Answer</th><th>Marks</th></tr>
<tr><td>3) (a)</td><td>Complete the table of values for
$y = 3 - 2x - x^2$
<table><tr><td>x</td><td>-4</td><td>-3</td><td>-2</td><td>-1</td><td>0</td><td>1</td><td>2</td></tr><tr><td>y</td><td></td><td></td><td>3</td><td></td><td></td><td>0</td><td></td></tr></table></td><td>(a)
<table><tr><td>x</td><td>-4</td><td>-3</td><td>-2</td><td>-1</td><td>0</td><td>1</td><td>2</td></tr><tr><td>y</td><td>-5</td><td>0</td><td>3</td><td>4</td><td>3</td><td>0</td><td>-5</td></tr></table>4 or 5 correct values
All correct values</td><td>(1)
(1)</td></tr>
<tr><td>(b)</td><td>Draw the graph of $y = 3 - 2x - x^2$
for values of x from - 4 to 2.</td><td>(b)
 

Points plotted correctly ft. pt (a)
Points joined with a smooth curve</td><td>(1)
(1)</td></tr>
<tr><td>(c)</td><td>Use the graph to find estimates of the solutions to the equation
$3 - 2x = x^2$</td><td>(c) Line $y = 0$ drawn on graph
$x = -3, x = 1$</td><td>(1)
(1)</td></tr>
<tr><td>(d)</td><td>Use the graph to find the coordinates of the turning point of the graph
$y = 3 - 2x - x^2$.</td><td>(d) (- 1, 4)</td><td>(1)</td></tr>
</table>

Where to go next?

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