

8300

GCSE MATHEMATICS

Foundation and Higher tier – Questions by Topic

Algebra

Plotting & Sketching graphs of quadratic functions

v1.0

Name _____

Materials

For this paper you must have:

- Mathematical instruments

Information

- The marks for questions are shown in brackets

Advice

- In all calculations, show clearly how you work out your answer

For questions 1 to 4 you may use a calculator.



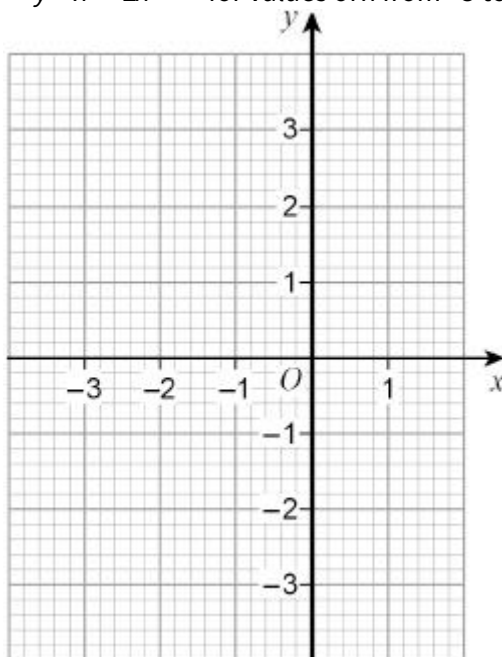
Q1.

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

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

(2)

- (b) Draw the graph of $y = x^2 + 2x$ for values of x from -3 to 1



(2)

(Total 4 marks)

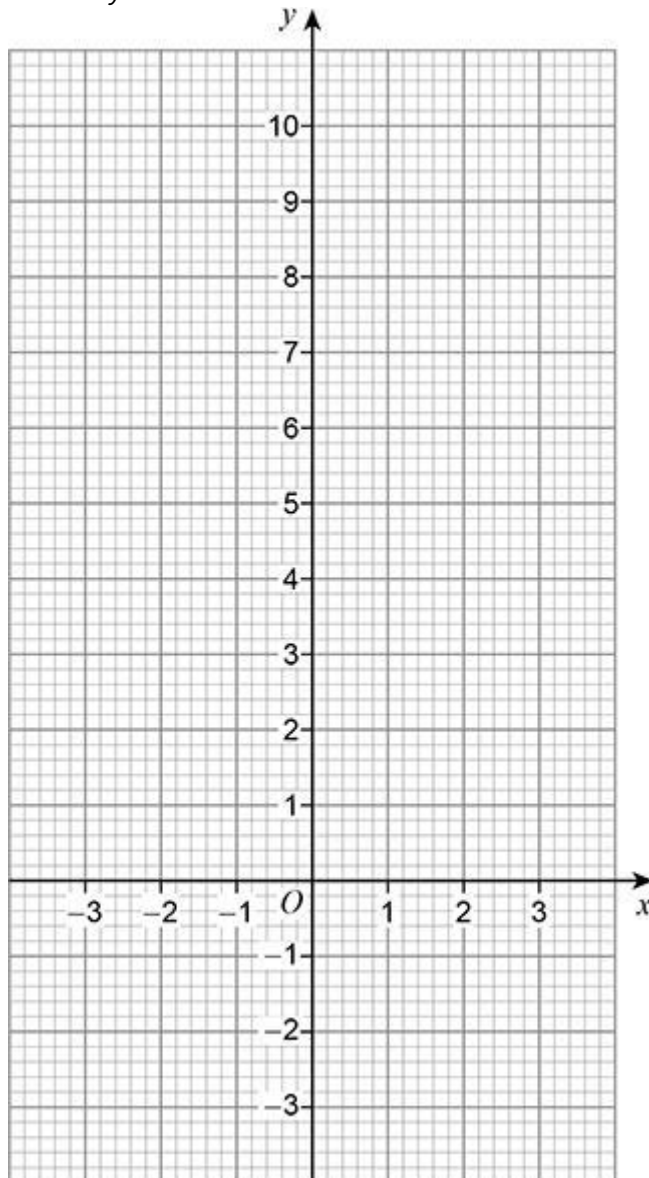
Q2.

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

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

(1)

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



(2)

(Total 3 marks)

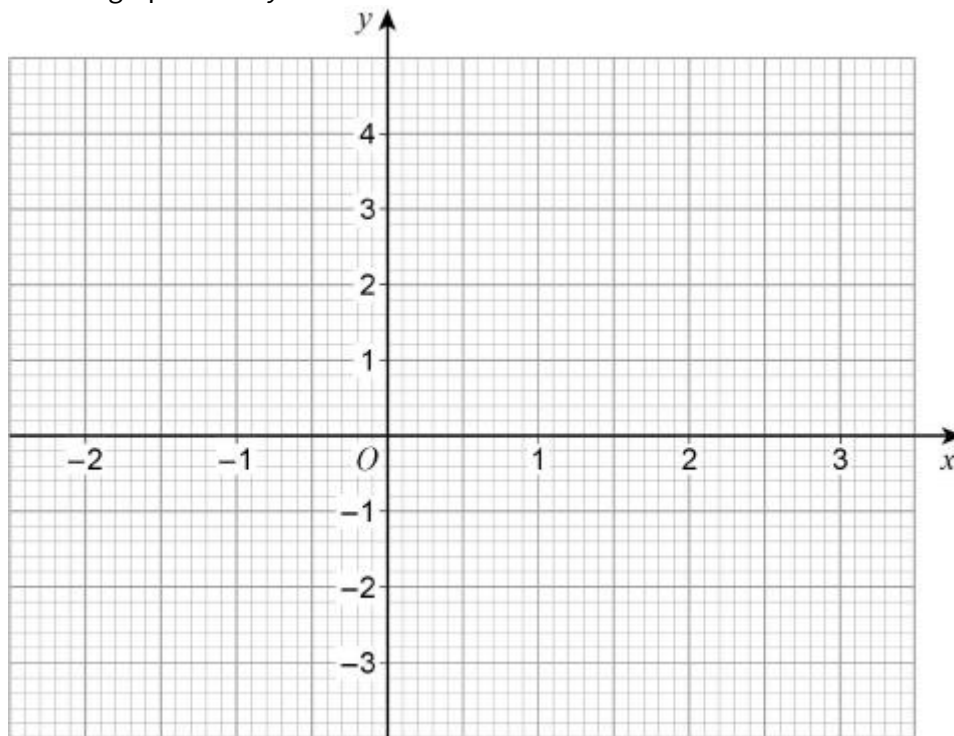
Q3.

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

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

(2)

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



(2)

(Total 4 marks)

Questions 4 to 6 are **higher** tier only

Q4.

Which of these points lies on the curve $y = x^2 - 4x + 1$

$(-1, 4)$

$(-1, -4)$

$(-1, -2)$

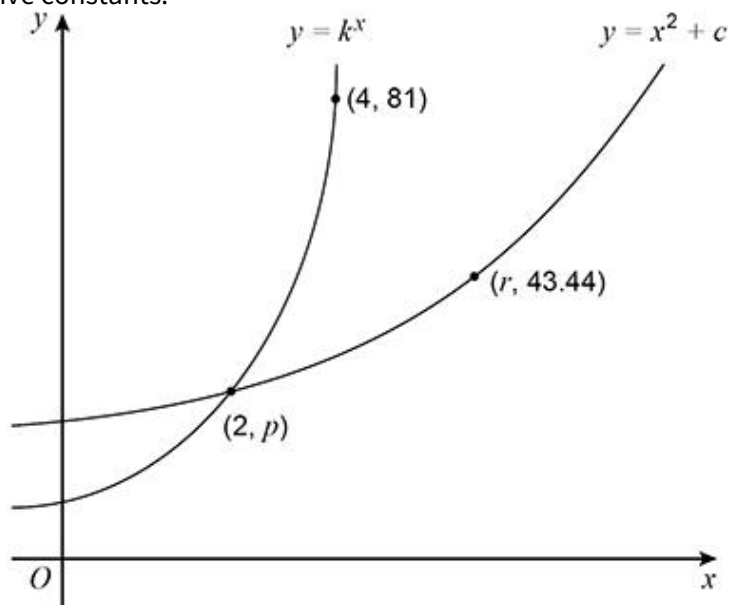
$(-1, 6)$

(Total 1 mark)

Plotting and Sketching graphs of quadratic functions - Cross-topic questions

Q5.

Here is a sketch of the graphs of $y = k^x$ and $y = x^2 + c$
 k and c are positive constants.



Work out the value of r .

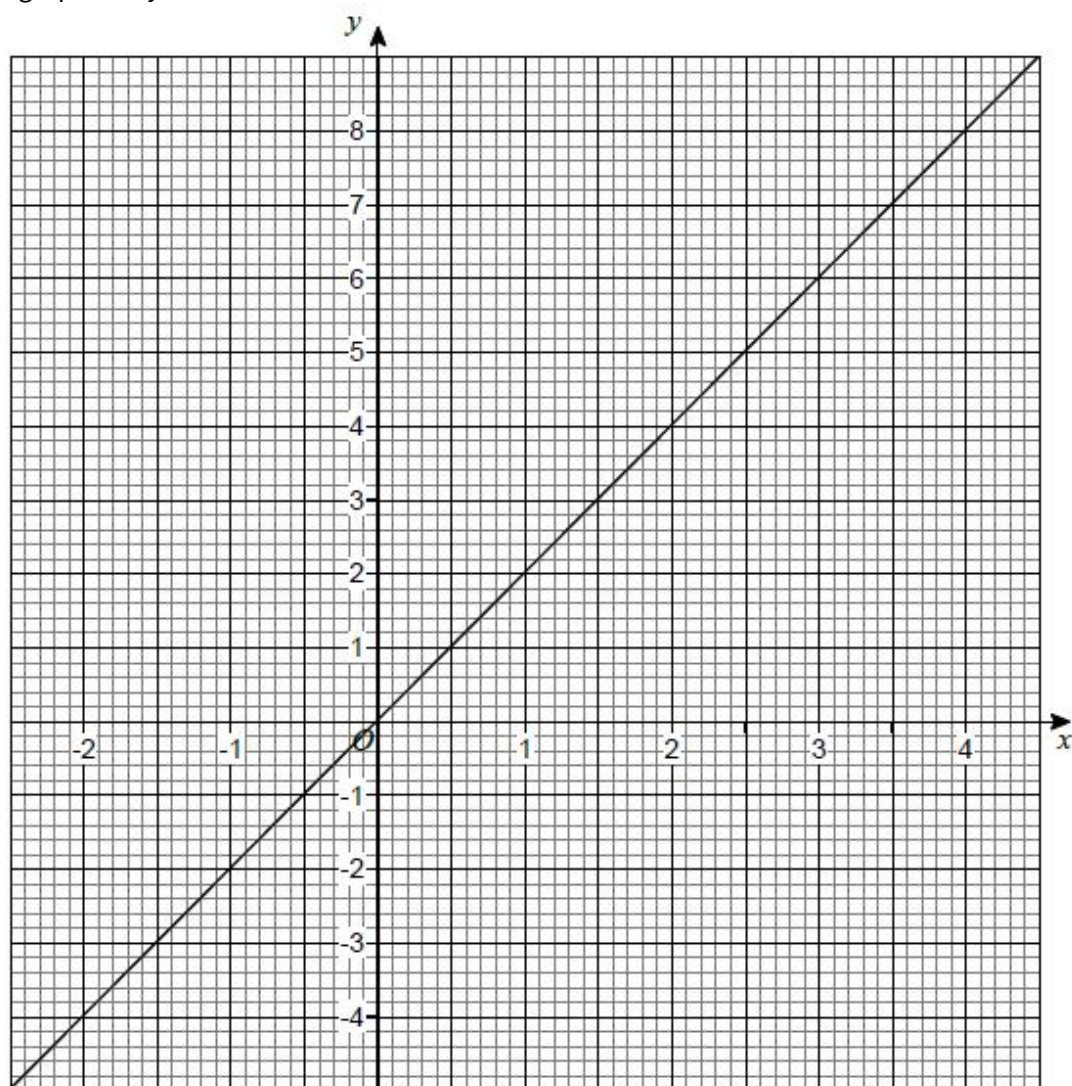
(Total 4 marks)

For question 6, you must NOT use a calculator.



Q6.

The graph of $y = 2x$ is shown.



By drawing the graph $y = 3x^2 - 4$ on the grid,
work out approximate solutions to $3x^2 - 4 = 2x$

(Total 4 marks)