


Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Pages	Mark
3	
4 – 5	
6 – 7	
8 – 9	
TOTAL	

GCSE Mathematics (Non-calculator Paper)

Practice Paper Style Questions Topic: Quadratic Graphs (Higher Tier)

<p>For this paper you must have:</p> <ul style="list-style-type: none"> • black pen • HB pencil • ruler (with cm & mm) • rubber • protractor • compass • pencil sharpener 	
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Time allowed

- 1 hour

Instructions

- Use **black ink** or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the space provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work that you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is **29**.
The quality of your written communication is specifically assessed in questions indicated with an asterisk (*)
- You may ask for more answer paper and graph paper.
These must be tagged securely to this answer booklet.
- A calculator **MUST** not be used.

Advice

- Read each question carefully before you answer it.
- In all calculations, show clearly how you work out your answer.
- Check your answers if you have time at the end.

There are no questions printed on this page

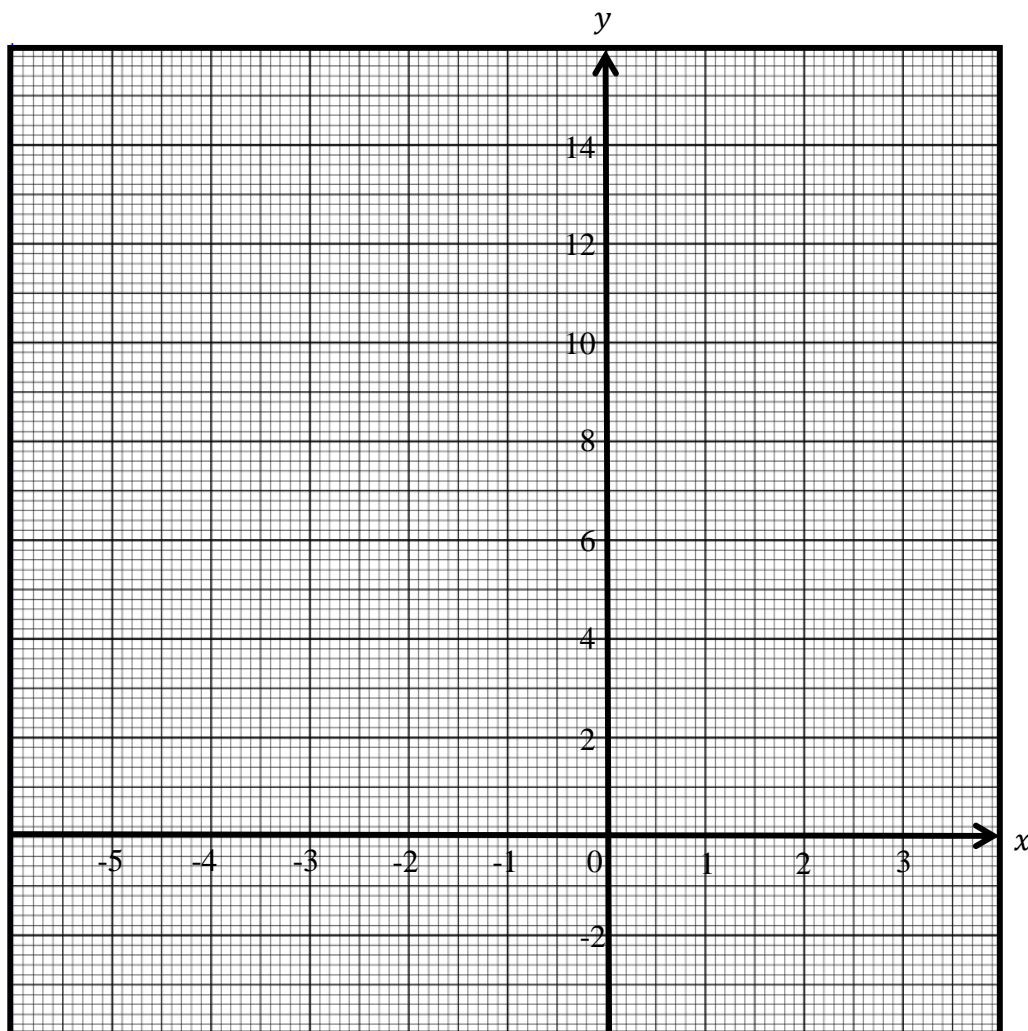
**DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED**

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

x	-4	-3	-2	-1	0	1	2
y	13		3	1			7

(2 marks)

- (b) On the grid below, draw the graph of $y = x^2 + x + 1$ for values of x from -4 to 2.

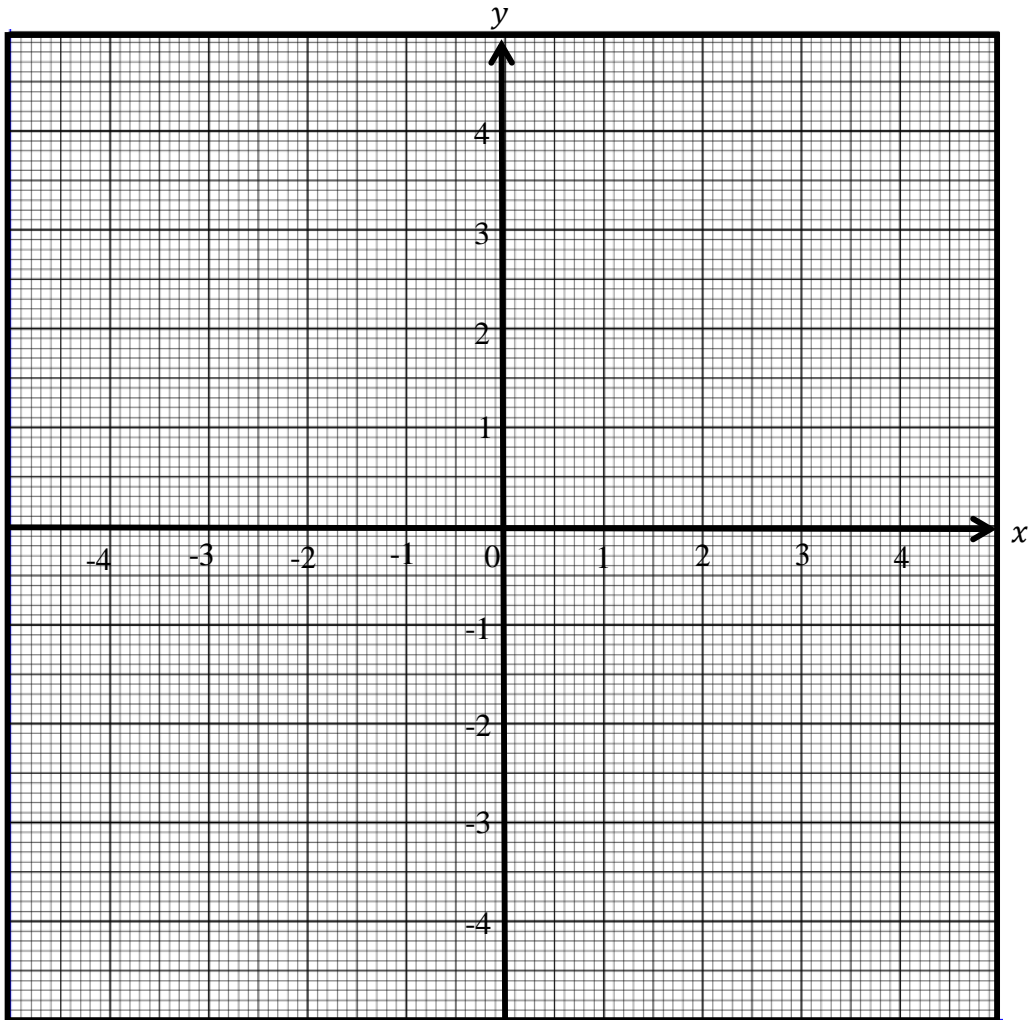


(2 marks)

- (c) Use your graph to estimate the values of x when $y = 5$.

Answer $x =$ or .. $x =$ (2 marks)

- 2 (a) Construct the graph of $x^2 + y^2 = 4$



(2 marks)

- (b) By drawing the line $x + y = 1$ on the grid, solve the equations:

$$x^2 + y^2 = 4$$

$$x + y = 1$$

Answer $x = \dots\dots\dots$, $y = \dots\dots\dots$ (2 marks)

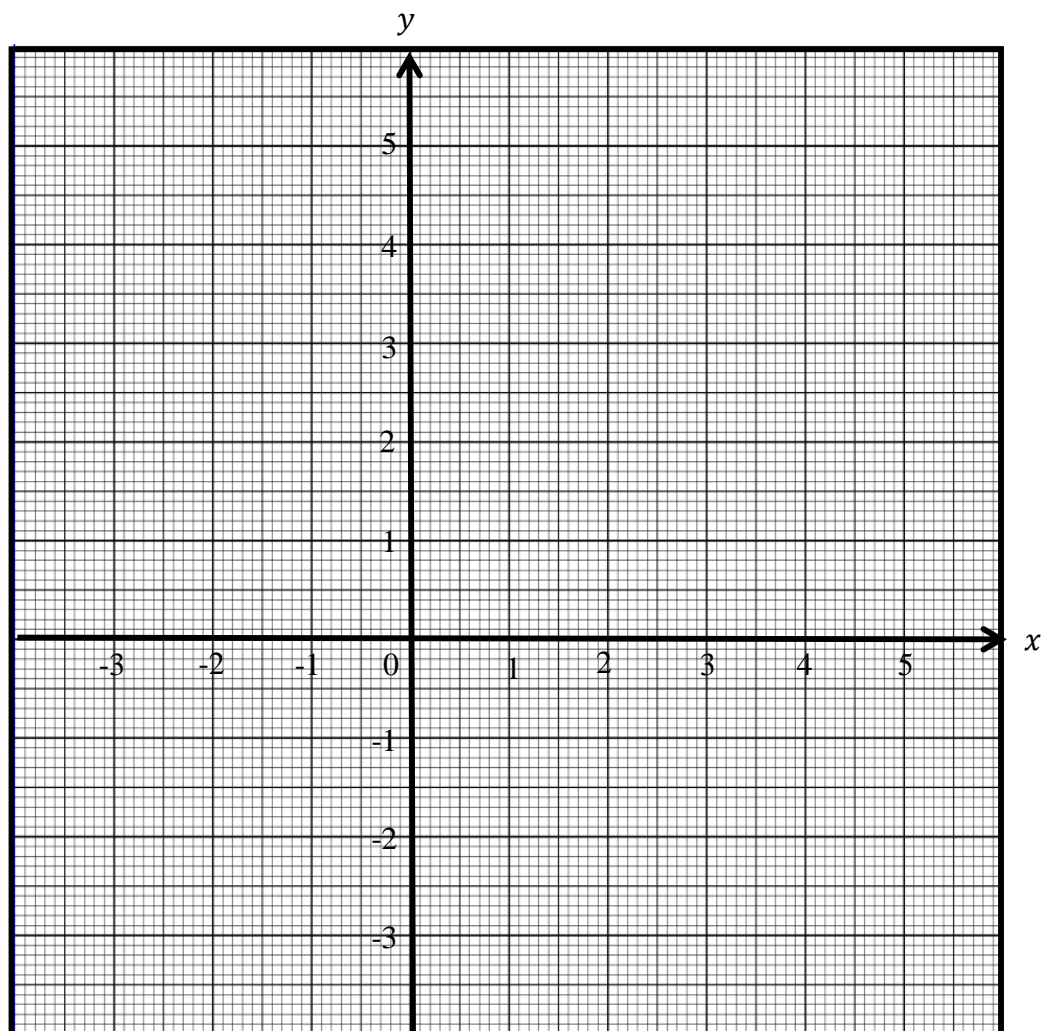
OR Answer $x = \dots\dots\dots$, $y = \dots\dots\dots$ (2 marks)

- 3 (a) Complete the table of values for $y = x^2 - 4x + 1$

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

(2 marks)

- (b) On the grid below, draw the graph of $y = x^2 - 4x + 1$ for values of x from -1 to 5.



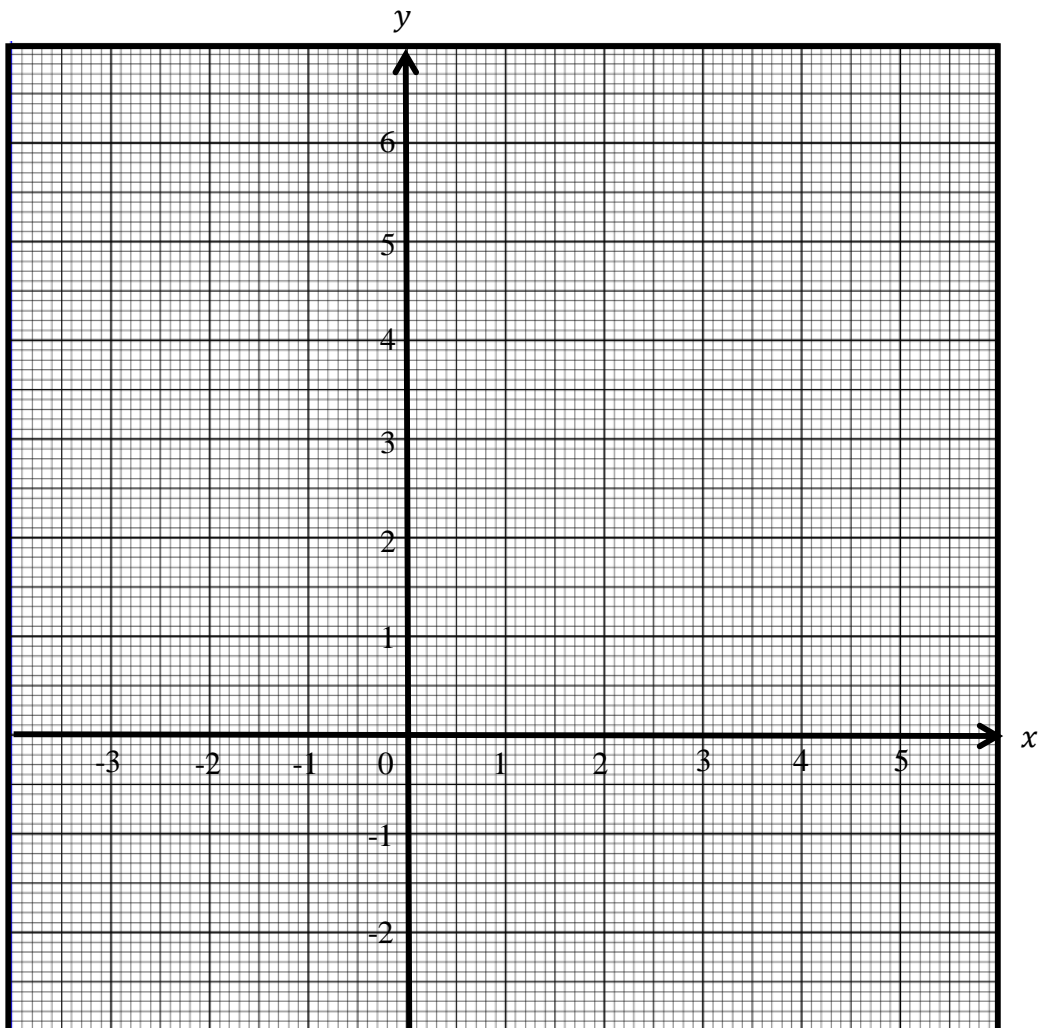
(2 marks)

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

x	-2		0	1			
y			-1			2	7

(2 marks)

- (b) On the grid below, draw the graph of $y = x^2 - 2x - 1$ for values of x from -2 to 4.



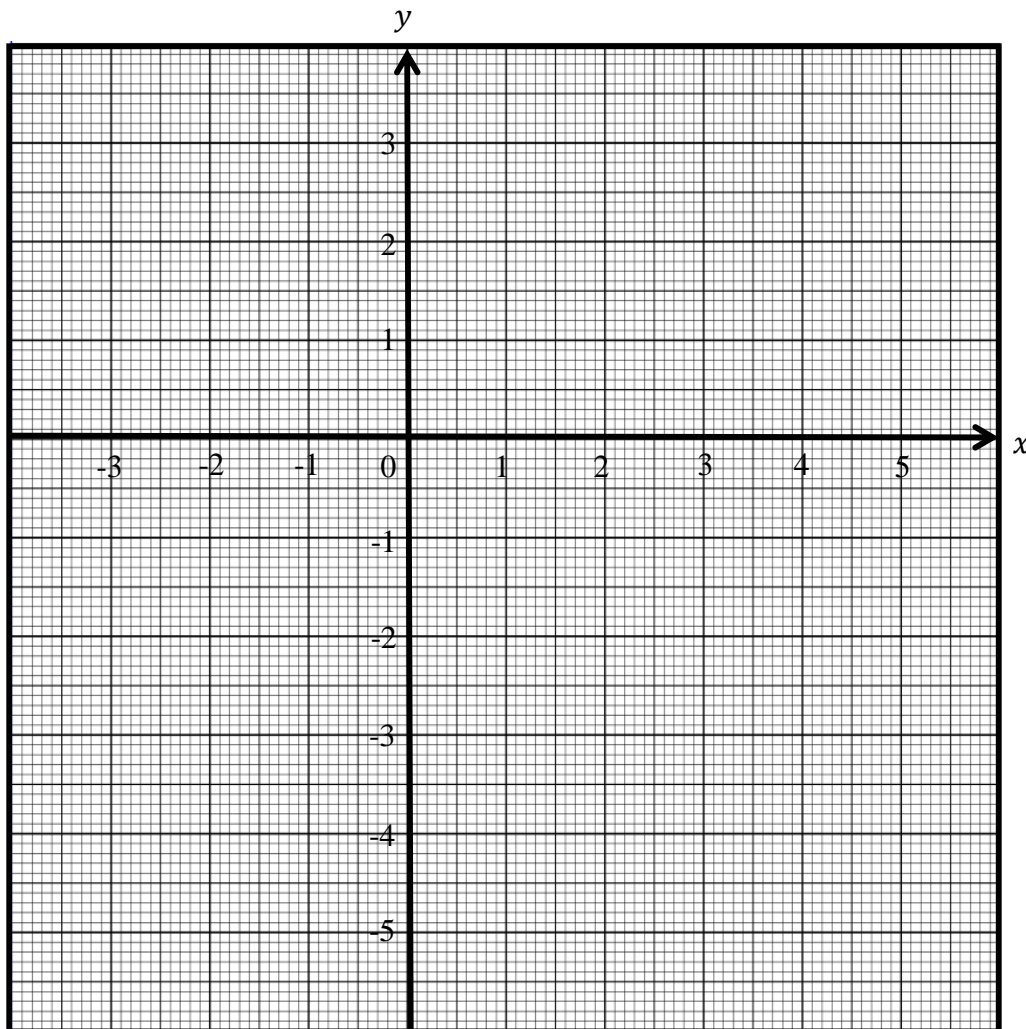
(2 marks)

- 5 (a) Complete the table of values for $y = x^2 - 4x - 1$

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

(2 marks)

- (b) On the grid below, draw the graph of $y = x^2 - 4x - 1$ for values of x from -1 to 5.

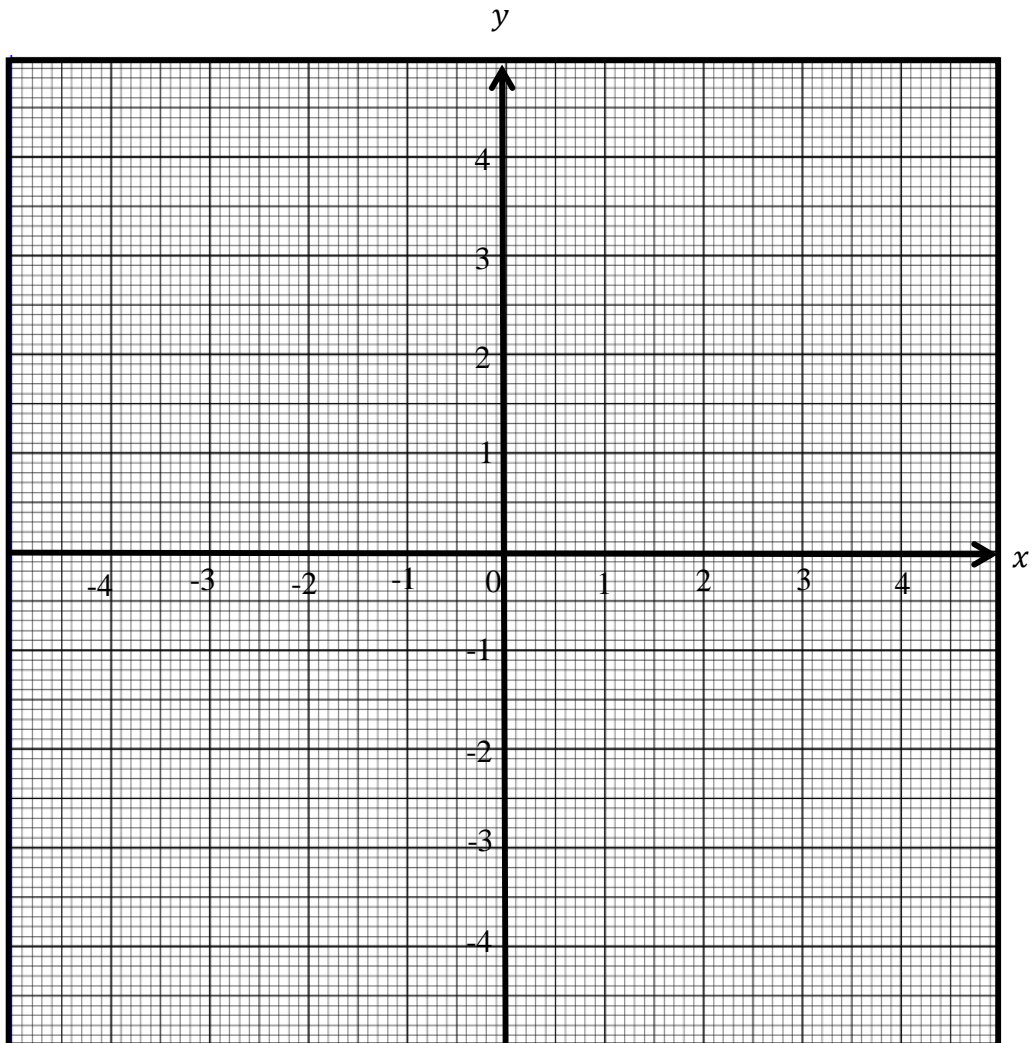


(2 marks)

- (c) Use your graph to estimate the values of x when $y = 2$.

Answer $x =$or.. $x =$ (2 marks)

- 6 Use the grid below to show that any straight line that passes through the point (2, 2) must intersect the curve with the equation $x^2 + y^2 = 16$ at two points.



(3 marks)

END OF QUESTIONS

There are no questions printed on this page

**DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED**

