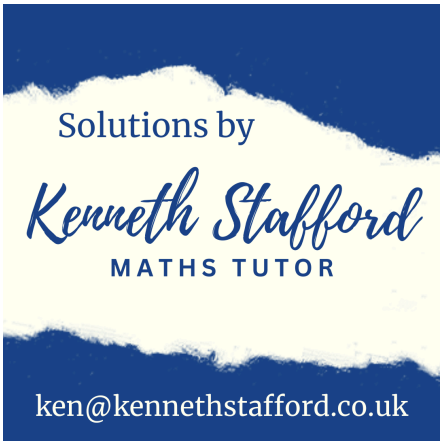
Name: SOLUTIONS

GCSE (1 - 9)

Drawing Quadratic Graphs





These questions are compiled from *released* Pearson Edexcel GCSE maths exam papers
They contain exam questions from up until the ***Summer 2023*** exam series
More recent exam papers do exist but are withheld for mock exams
As new exam papers are released these worksheets will gradually be updated
The ***most current*** version of these worksheets will always be available at: kennethstafford.co.uk
These worksheets were made using examq.co.uk

Question	Where the question appeared
1	Edexcel, GCSE, Autumn 2021, Paper 2F, Q24
2	Edexcel, GCSE, Autumn 2020, Paper 3F, Q28
3	Edexcel, GCSE, Summer 2019, Paper 1F, Q29
4	Edexcel, GCSE, Autumn 2018, Paper 3F, Q22
5	Edexcel, GCSE, Autumn 2018, Paper 2F, Q24
6	Edexcel, GCSE, Autumn 2017, Paper 1F, Q29
7	Edexcel, GCSE, Summer 2022, Paper 1F, Q28
8	Edexcel, GCSE, Summer 2023, Paper 3F, Q26
9	Edexcel, GCSE, November 2022, Paper 2F, Q24
10	Edexcel, GCSE, Summer 2022, Paper 1F, Q28

Drawing Quadratic Graphs (Questions from Past Papers)

1

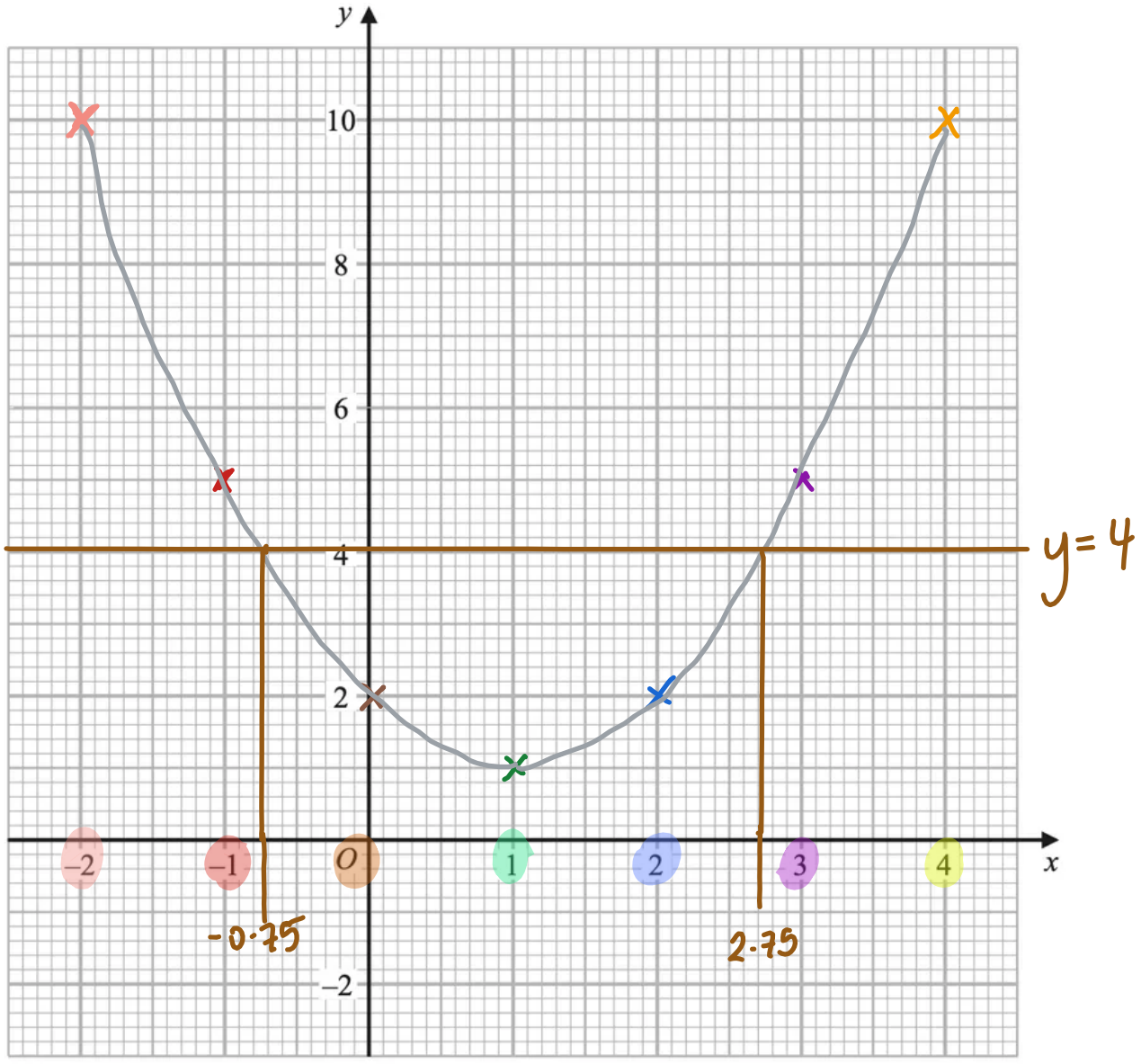
(a) Complete the table of values for $y = x^2 - 2x + 2$ $(2)^2 - 2(2) + 2 = 2$

x	–2	–1	0	1	2	3	4
y	10	5	2	1	2	5	10

$(-1)^2 - 2(-1) + 2 = 5$ $(1)^2 - 2(1) + 2 = 1$ $(4)^2 - 2(4) + 2 = 10$ **(2)**

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

(2)



(c) Use your graph to find estimates of the solutions of the equation $x^2 - 2x + 2 = 4$

–0.65 to –0.8
and
2.65 to 2.8 accepted answers

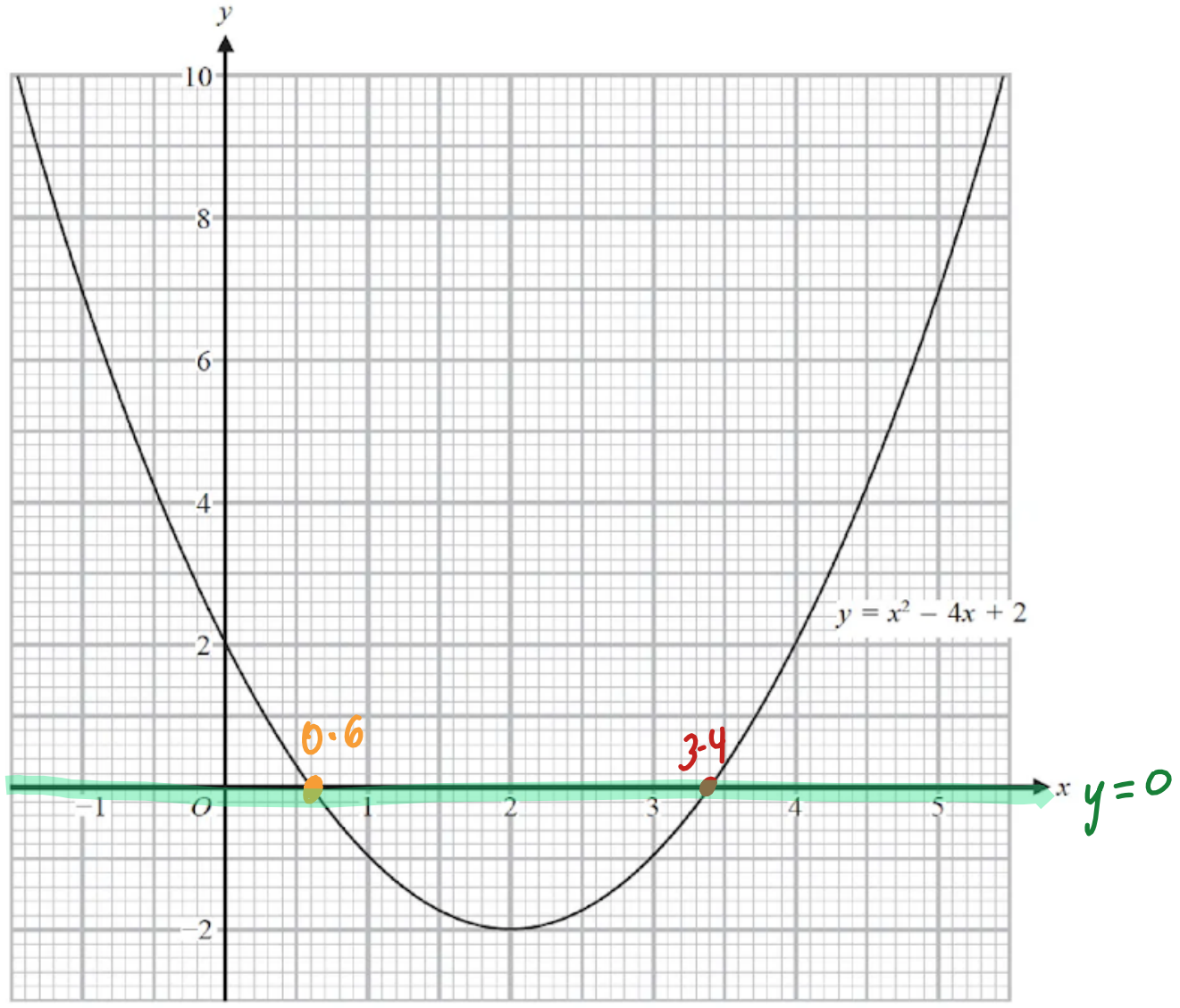
-0.75 and 2.75

(2)

(Total for Question 24 is 6 marks)

[Edexcel, GCSE, Autumn 2021, Paper 2F, Q24]

2



(b) Use this graph to find estimates for the solutions of the quadratic equation $x^2 - 4x + 2 = 0$

0.55 to 0.65,
3.35 to 3.45 accepted

0·6 and 3·4

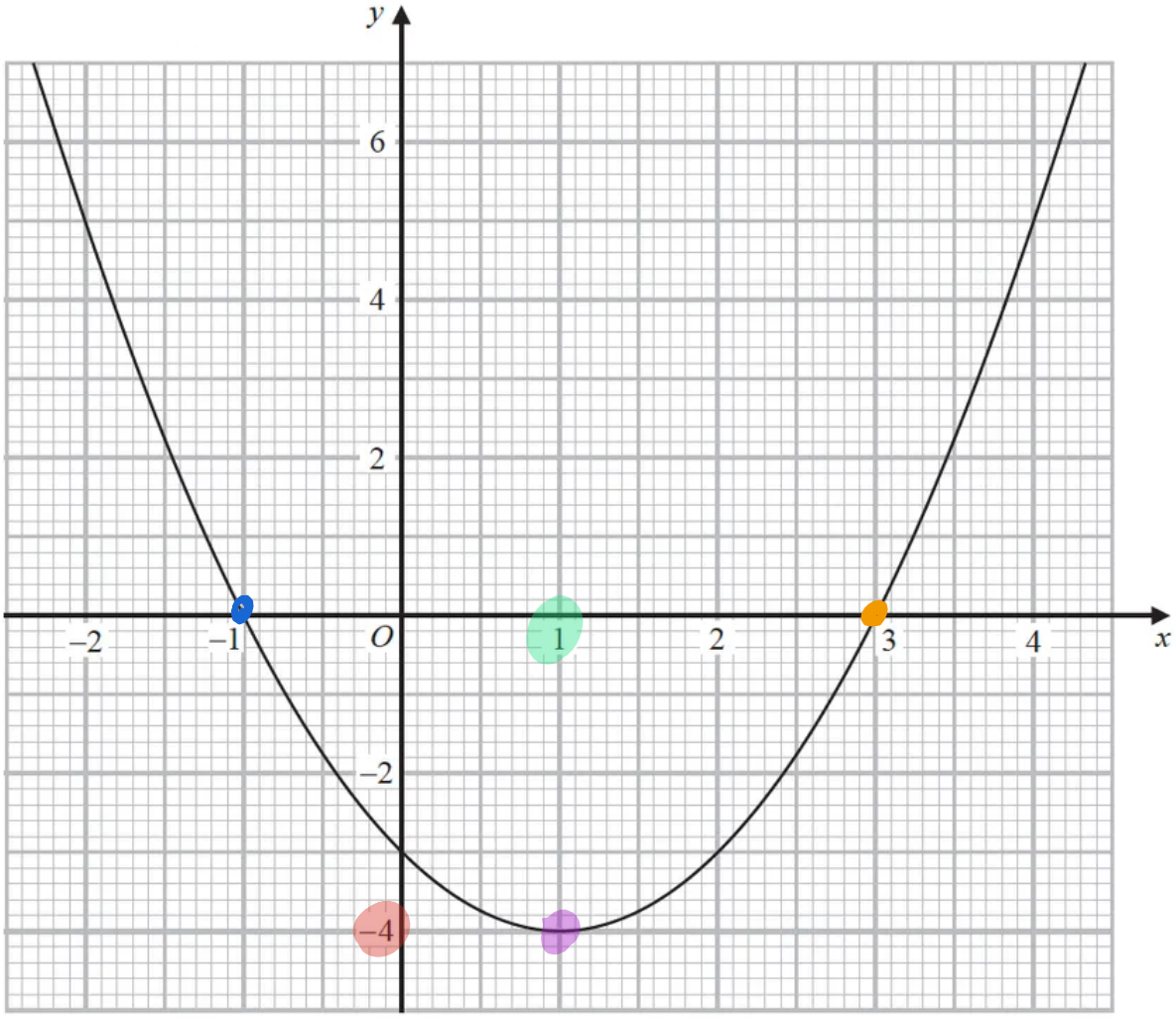
(2)

(Total for Question 28 is 3 marks)

[Edexcel, GCSE, Autumn 2020, Paper 3F, Q28]

3

Here is the graph of $y = x^2 - 2x - 3$



(a) Write down the coordinates of the turning point on the graph of $y = x^2 - 2x - 3$

(1 , -4)

(1)

(b) Use the graph to find the roots of the equation $x^2 - 2x - 3 = 0$

-1 and 3

(2)

(Total for Question 29 is 3 marks)

[Edexcel, GCSE, Summer 2019, Paper 1F, Q29]

4

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

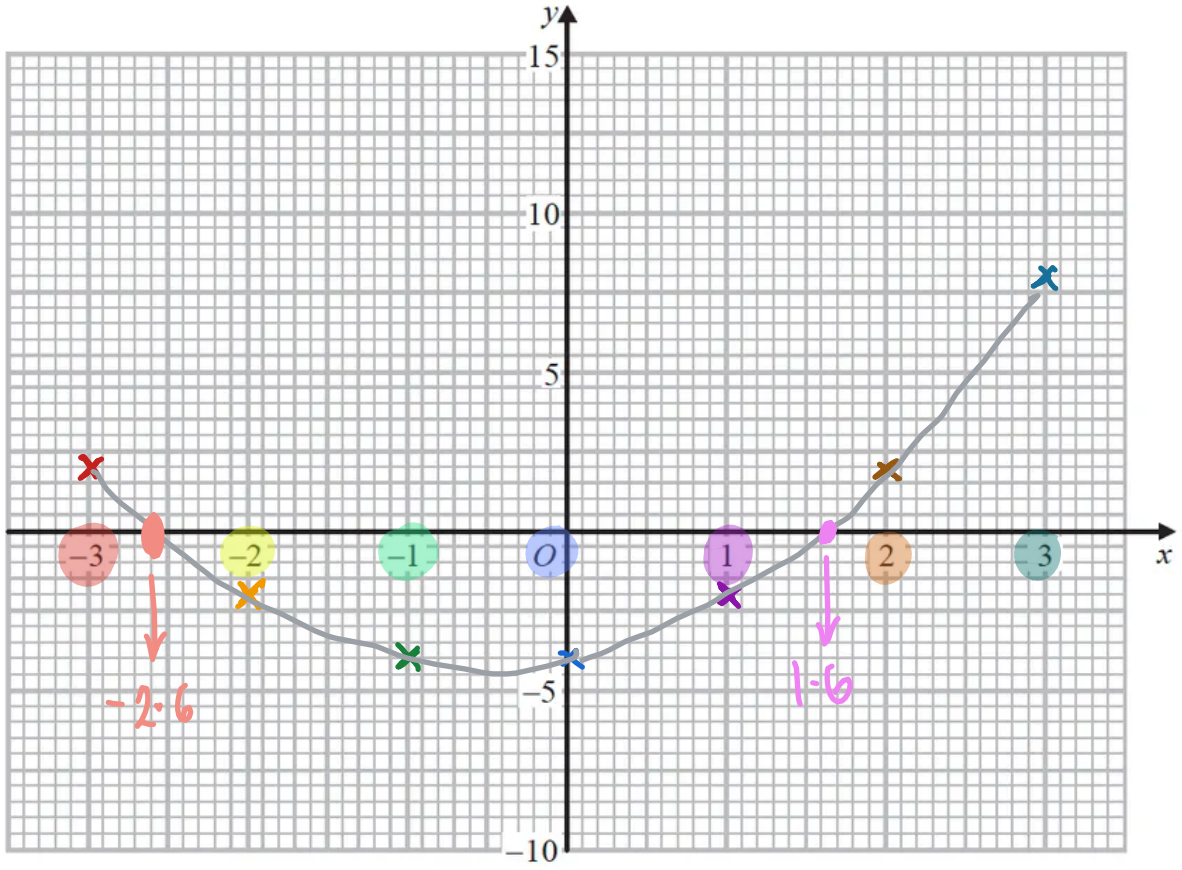
$(2)^2 + (2) - 4 = 2$

x	-3	-2	-1	0	1	2	3
y	2	-2	-4	-4	-2	2	8

$(-3)^2 + (-3) - 4 = 2$ $(0)^2 + (0) - 4 = -4$ $(3)^2 + (3) - 4 = 8$

(2)

(b) On the grid, draw the graph of $y = x^2 + x - 4$ for values of x from -3 to 3



(2)

(c) Use the graph to estimate a solution to $x^2 + x - 4 = 0$

-2.6 and 1.6

(1)

(Total for Question 22 is 5 marks)

[Edexcel, GCSE, Autumn 2018, Paper 3F, Q22]

5

(a) Complete the table of values for $y = x^2 - x - 6$

$(1)^2-(1)-6=-4$

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

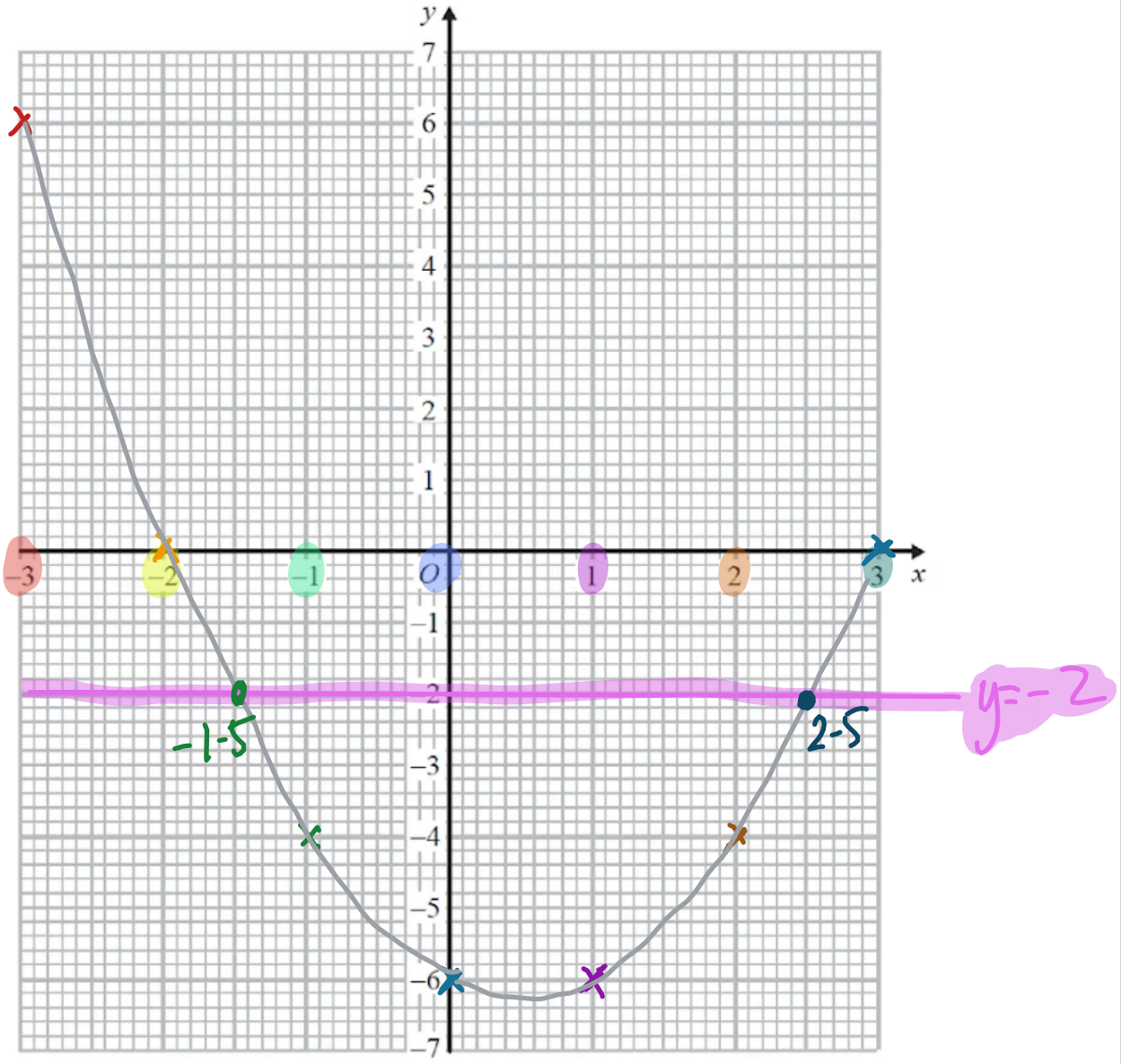
$(3)^2-(3)-6=0$

$(-2)^2-(-2)-6=0$ $(-1)^2-(-1)-6=-4$ $(2)^2-(2)-6=-4$

(2)

(b) On the grid, draw the graph of $y = x^2 - x - 6$ for values of x from -3 to 3

(2)



(c) Use your graph to find estimates of the solutions to the equation $x^2 - x - 6 = -2$

answers in the range
2.5 to 2.7 and −1.5 to −1.7

-1.5 and 2.5

(2)

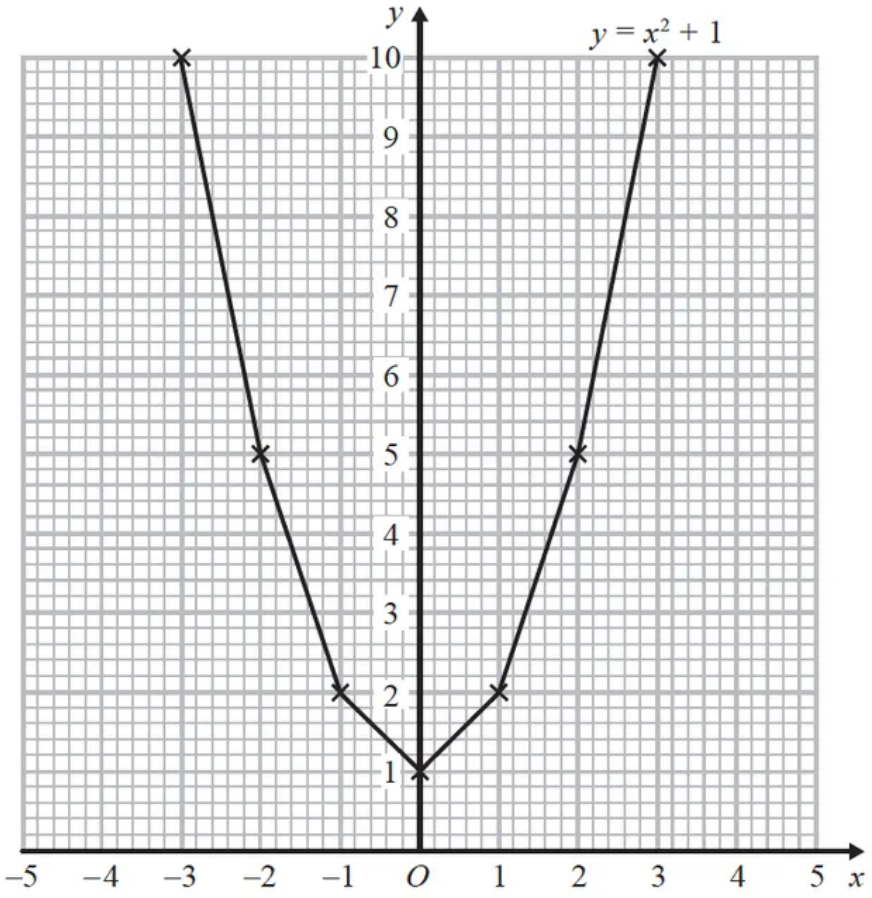
(Total for Question 24 is 6 marks)

[Edexcel, GCSE, Autumn 2018, Paper 2F, Q24]

6

Brogan needs to draw the graph of $y = x^2 + 1$

Here is her graph.



Write down one thing that is wrong with Brogan's graph.

The line should be a curve not straight lines.

(Total for Question 29 is 1 mark)

[Edexcel, GCSE, Autumn 2017, Paper 1F, Q29]

7

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

x	−1	0	1	2	3	4
y	5	1	−1	−1	1	5

$(-1)^2 - 3(-1) + 1 = 5$

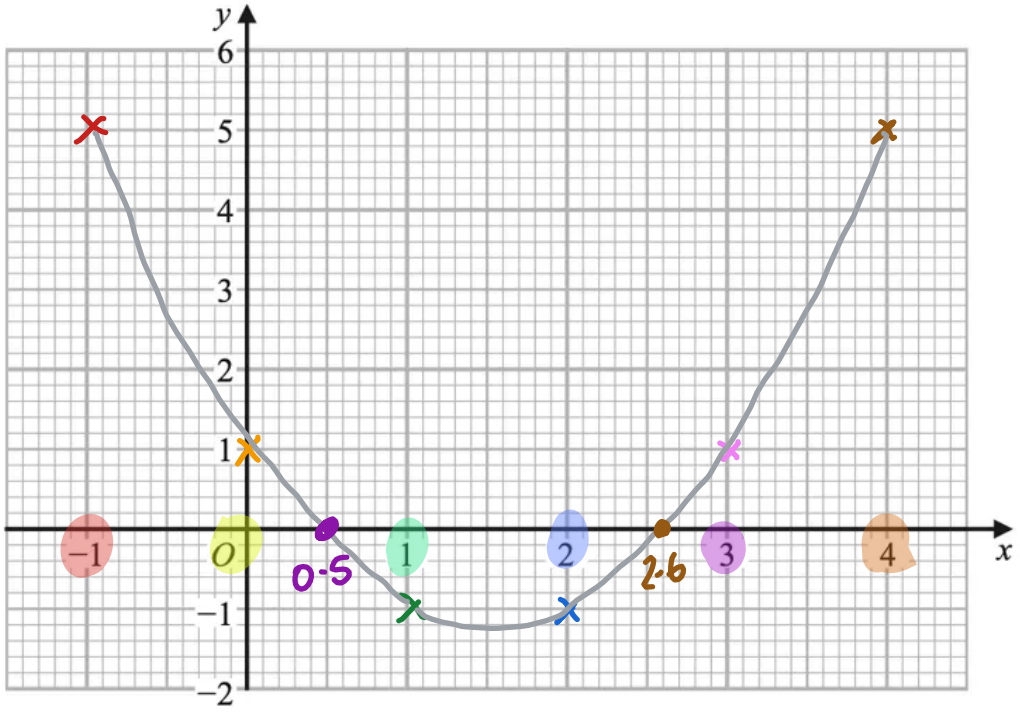
$(2)^2 - 3(2) + 1 = -1$

$(3)^2 - 3(3) + 1 = 1$

$(4)^2 - 3(4) + 1 = 5$

(2)

(b) On the grid, draw the graph of $y = x^2 - 3x + 1$ for values of x from −1 to 4



(2)

(c) Using your graph, find estimates for the solutions of the equation $x^2 - 3x + 1 = 0$

Answers in the range 0.3 to 0.5
and 2.5 to 2.7

0·5 and 2·6

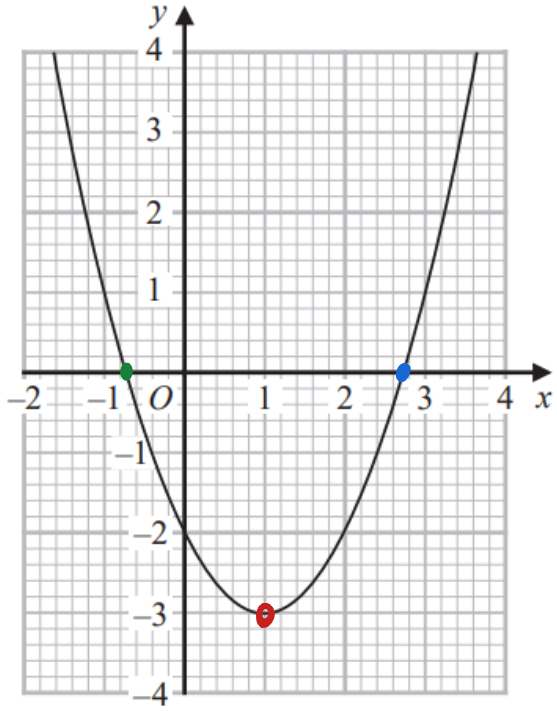
(2)

(Total for Question 28 is 6 marks)

[Edexcel, GCSE, Summer 2022, Paper 1F, Q28]

8

Here is the graph of $y = x^2 - 2x - 2$



(a) Write down the coordinates of the turning point on the graph of $y = x^2 - 2x - 2$

(1 , -3)

(1)

(b) Write down an estimate for one of the roots of $x^2 - 2x - 2 = 0$

-0.7 or 2.7

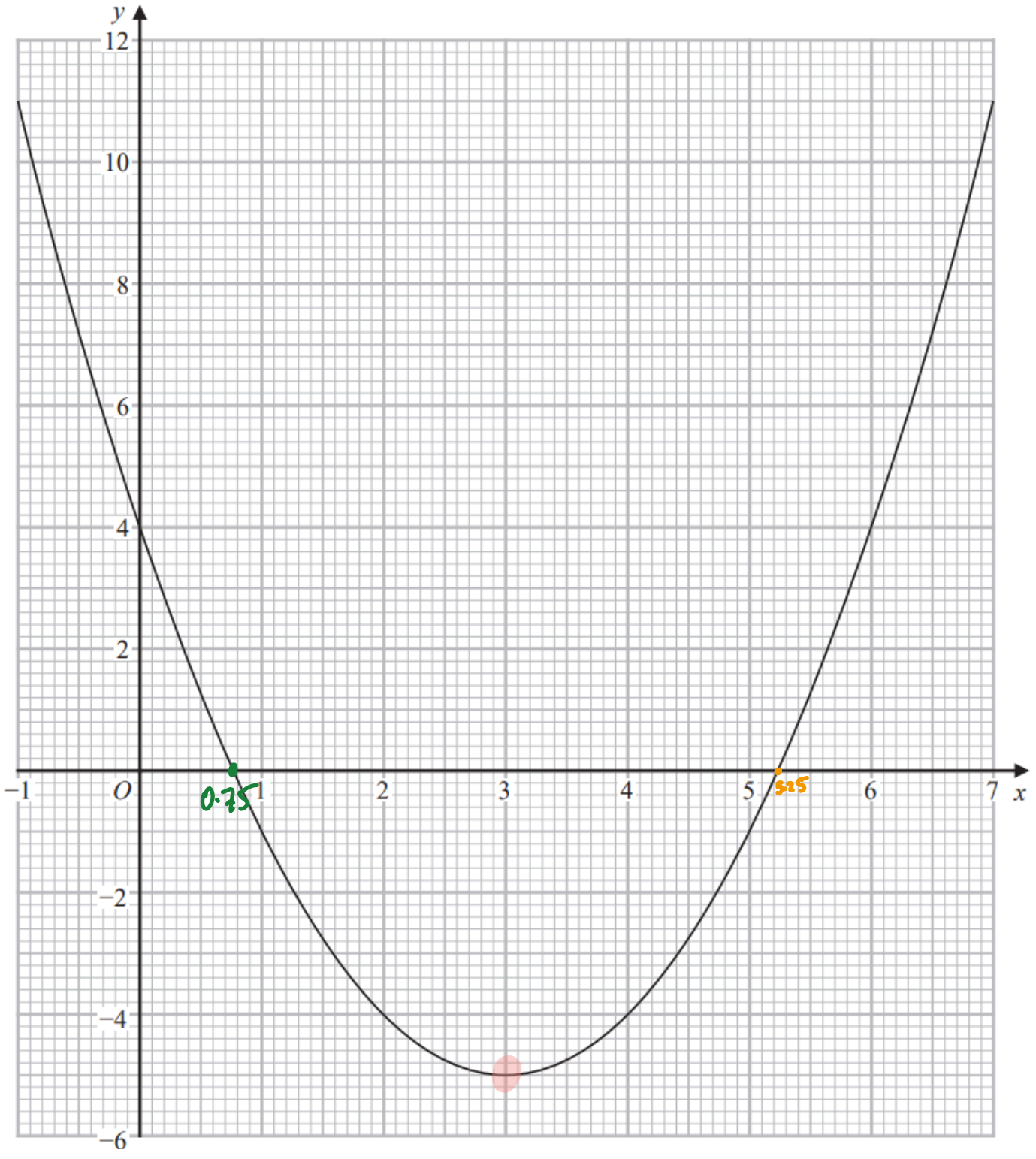
(1)

(Total for Question 26 is 2 marks)

[Edexcel, GCSE, Summer 2023, Paper 3F, Q26]

9

Here is the graph of $y = x^2 - 6x + 4$



(a) Write down the y intercept of the graph of $y = x^2 - 6x + 4$

4

(1)

(0,4)

(b) Write down the coordinates of the turning point of the graph of $y = x^2 - 6x + 4$

(3 , -5)

(1)

(c) Use the graph to find estimates for the roots of $x^2 - 6x + 4 = 0$

0·75 and 5·25

(2)

(Total for Question 24 is 4 marks)

[Edexcel, GCSE, November 2022, Paper 2F, Q24]

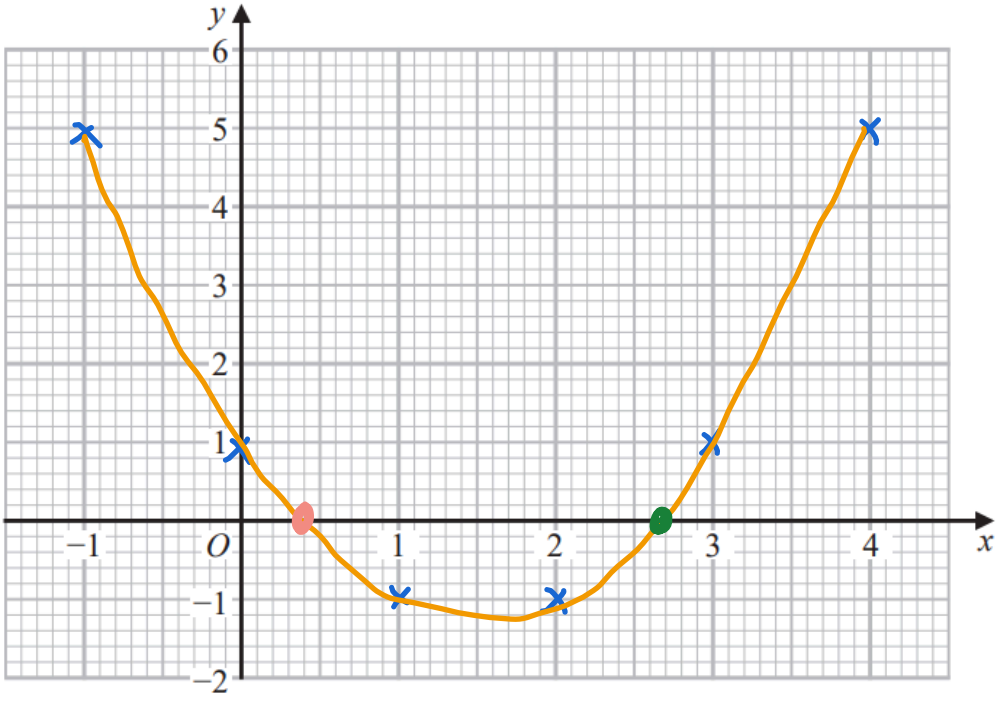
10

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

x	−1	0	1	2	3	4
y	5	1	−1	-1	1	5

(2)

(b) On the grid, draw the graph of $y = x^2 - 3x + 1$ for values of x from −1 to 4



(2)

(c) Using your graph, find estimates for the solutions of the equation $x^2 - 3x + 1 = 0$

0·4 and 2·7

(2)

(Total for Question 28 is 6 marks)

[Edexcel, GCSE, Summer 2022, Paper 1F, Q28]