



Aberdare Community School
Mathematics Department

WJEC GCSE
Foundation – Non Calculator
Algebra

Quadratic and cubic graphs

Name:

Set:

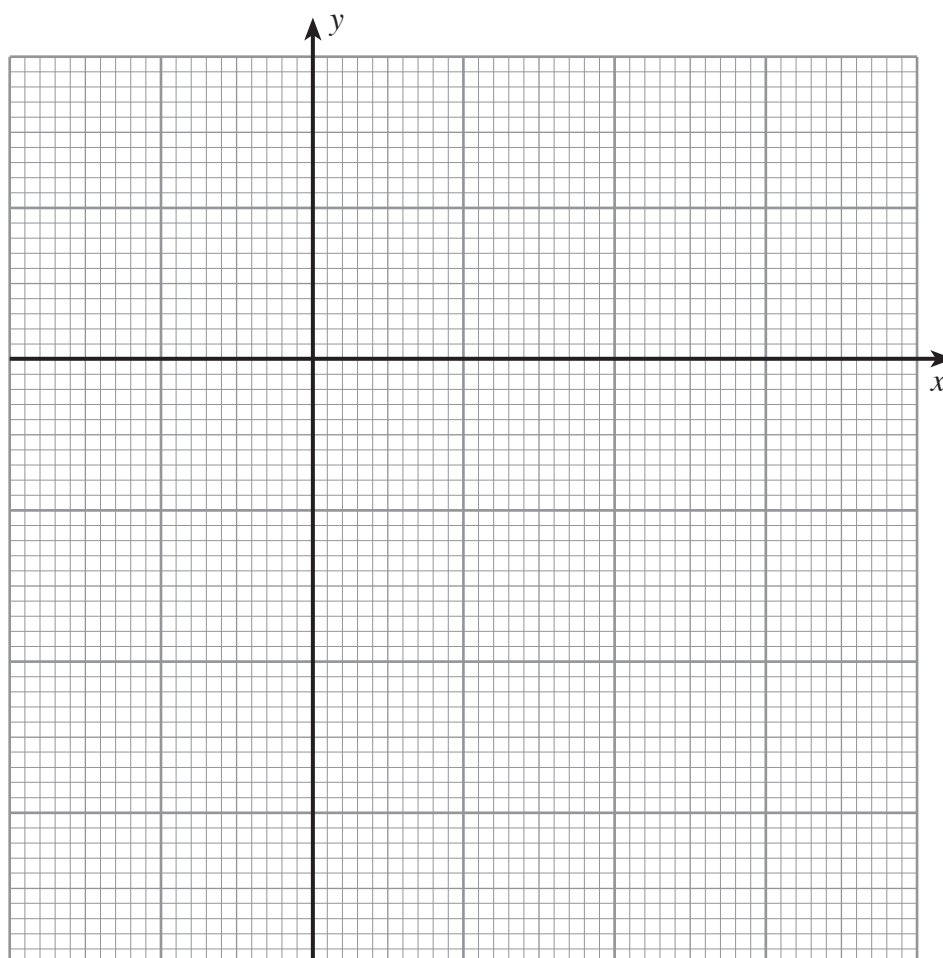
Date:

Teacher:

19. (a) Complete the following table which gives values of $y = 5 - x^2$ for values of x from -2 to 4 . [1]

x	-2	-1	0	1	2	3	4
$y = 5 - x^2$	1		5	4	1	-4	-11

- (b) Using suitable scales draw the graph of $y = 5 - x^2$ for values of x from -2 to 4 on the graph paper below. [3]



- (c) Draw the line $y = 2$ on the graph paper and write down the x -values of the points where the two graphs intersect.

..... [2]

19. The table shows the values of $y = 2x^2 + x - 3$ for values of x from -3 to 3 .

x	-3	-2	-1	0	1	2	3
$y = 2x^2 + x - 3$	12	3	-2	-3	0	7	18

(a) On the graph paper opposite, draw the graph of $y = 2x^2 + x - 3$ for values of x between -3 and 3 .

[2]

(b) Draw the line $y = 6$ on your graph paper and write down the x -values of the points where your two graphs intersect.

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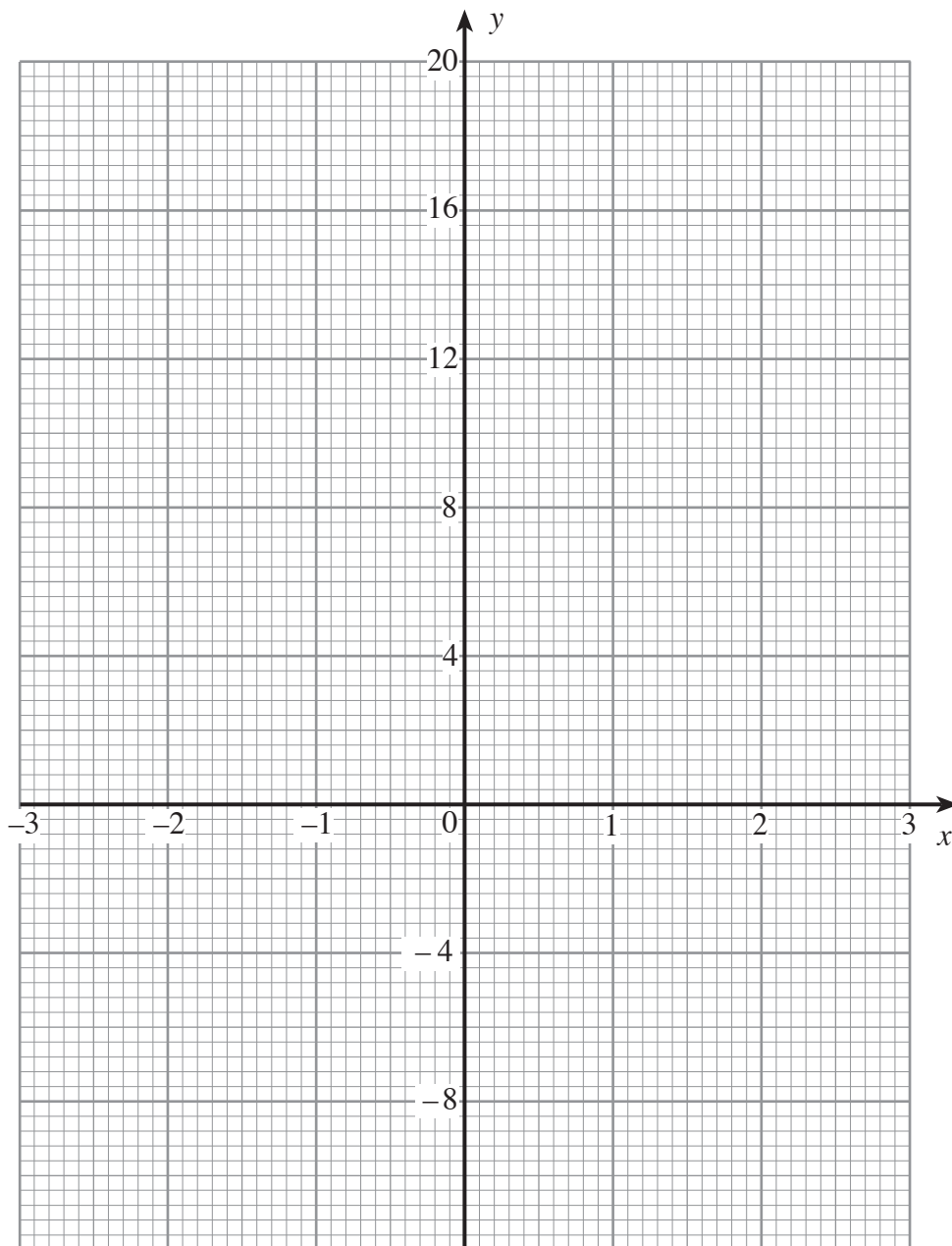
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[2]

For use with question 19.



17. The table shows some of the values of $y = 2x^2 + 4x - 1$ for values of x from -3 to 3 .

(a) Complete the table by finding the value of y for $x = -1$.

x	-3	-2	-1	0	1	2	3
$y = 2x^2 + 4x - 1$	5	-1		-1	5	15	29

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[1]

(b) On the graph paper opposite, draw the graph of $y = 2x^2 + 4x - 1$ for values of x between -3 and 3 .

[2]

(c) Draw the line $y = 3$ on your graph paper and write down the x -values of the points where your two graphs intersect.

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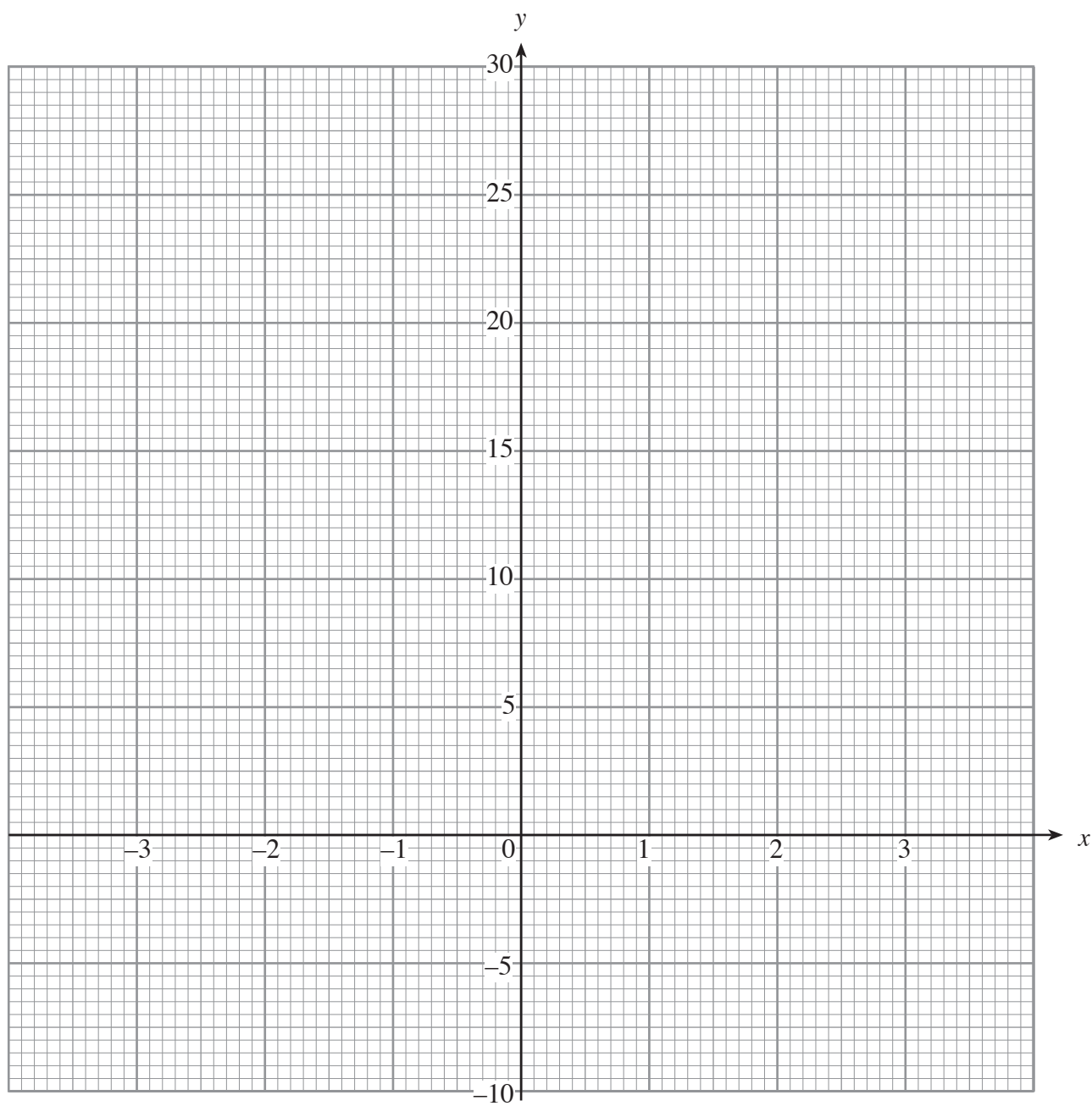
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[2]

For use with question 17.



15. The table shows some of the values of $y = x^3 - 8$ for values of x from -2 to 4 .

(a) Complete the table by finding the values of y for $x = -1$ and $x = 3$.

x	-2	-1	0	1	2	3	4
$y = x^3 - 8$	-16		-8	-7	0		56

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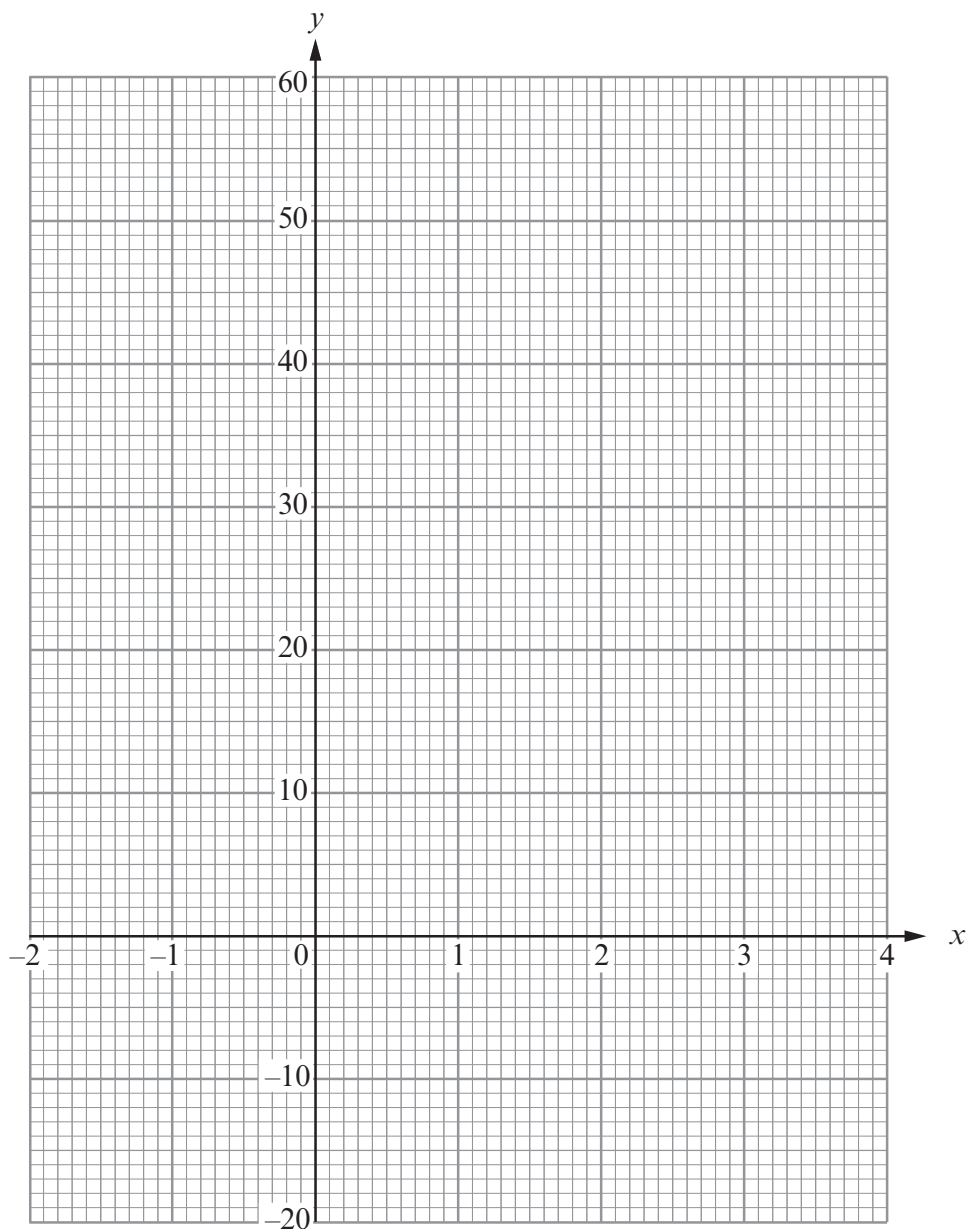
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[2]

(b) On the graph paper below, draw the graph of $y = x^3 - 8$ for values of x from -2 to 4 .

[2]



(c) Use your graph to solve the equation $x^3 - 8 = 40$.

.....

.....

[2]



10. The table shows values of $y = 2x^2 - 5x - 12$ for values of x from -3 to 5 .

x	-3	-2	-1	0	1	2	3	4	5
$y = 2x^2 - 5x - 12$	21	6	-5	-12	-15	-14		0	13

(a) Complete the table above.

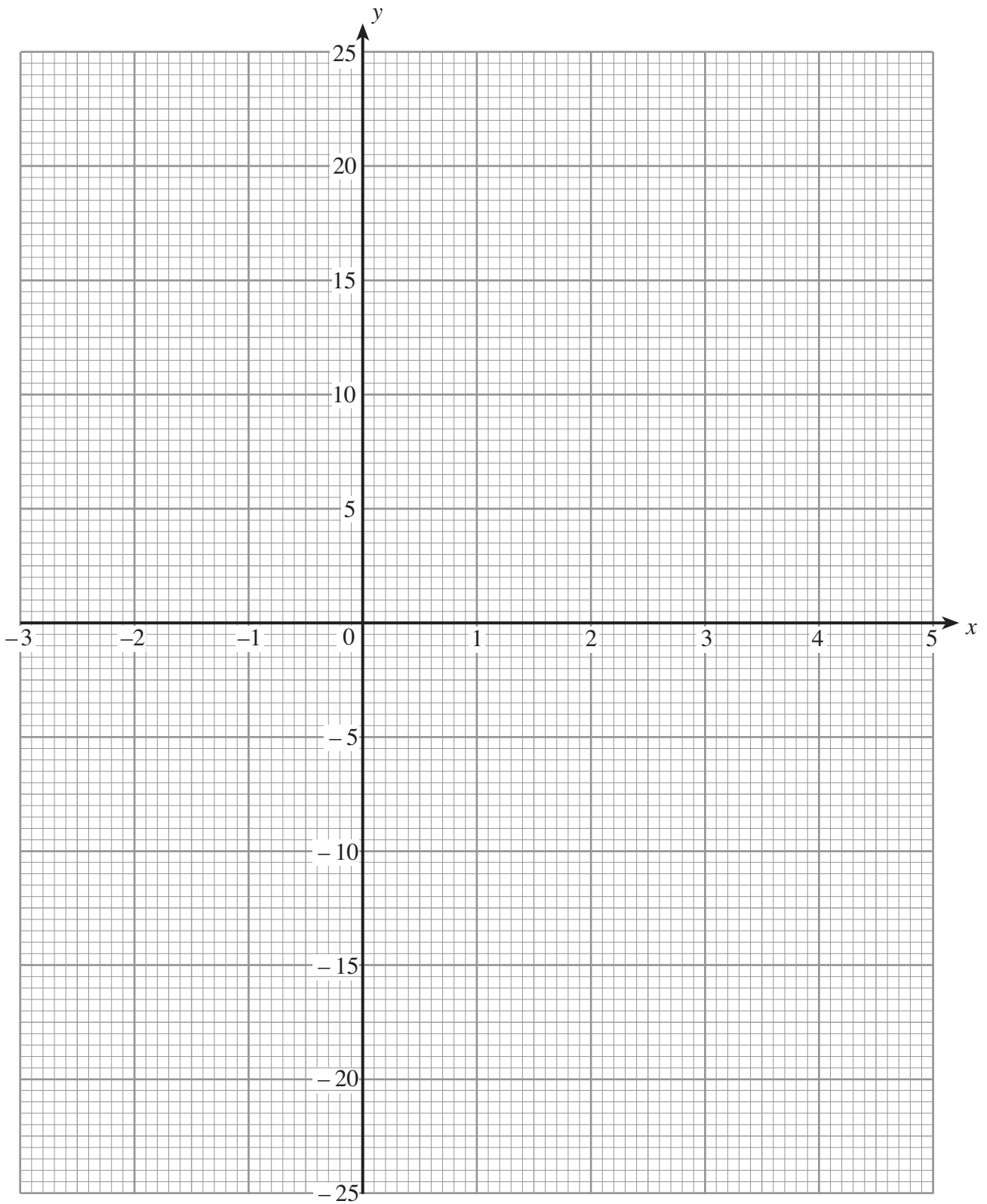
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[1]

(b) On the graph paper opposite draw the graph of $y = 2x^2 - 5x - 12$ for the values of x between -3 and 5 .

[2]

(c) Draw the line $y = -2$ on your graph paper and write down the x -coordinates of the points where this line intersects the curve $y = 2x^2 - 5x - 12$.

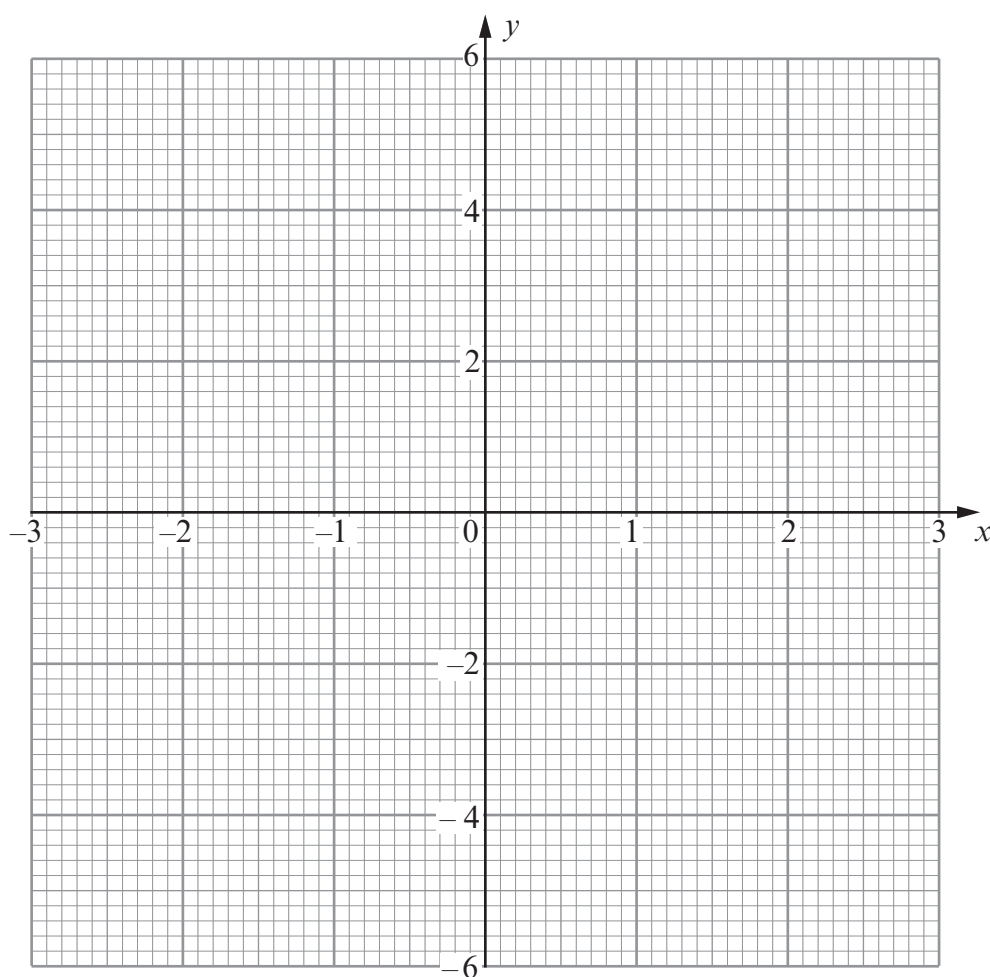
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[2]



11. The table shows the values of $y = x^2 - 3$ for values of x from -3 to 3 .

x	-3	-2	-1	0	1	2	3
$y = x^2 - 3$	6	1	-2	-3	-2	1	6

- (a) On the graph paper below, draw the graph of $y = x^2 - 3$ for values of x between -3 and 3 . [2]



- (b) Write down the x -values of the points where the graph cuts the x -axis.

.....

.....

[1]

12. The table shows values of $y = 3x^2 + 2x - 10$ for values of x from -4 to 3 .

x	-4	-3	-2	-1	0	1	2	3
$y = 3x^2 + 2x - 10$	30		-2	-9	-10	-5	6	23

(a) Complete the table above.

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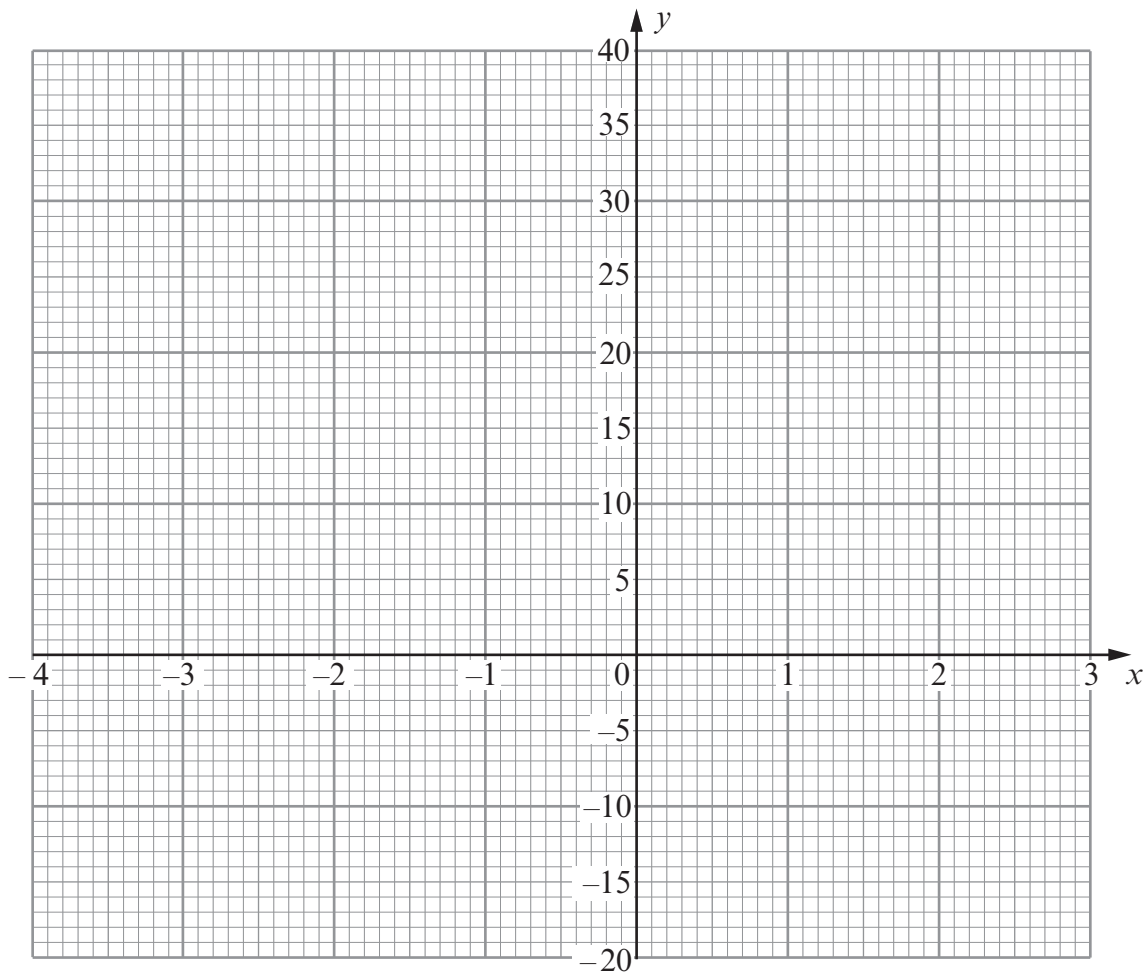
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[1]

(b) On the graph paper, below draw the graph of $y = 3x^2 + 2x - 10$ for values of x from -4 to 3 .

[2]



(c) Write down the x -coordinates of the points where the graph of $y = 3x^2 + 2x - 10$ intersects the x -axis.

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[1]

END OF PAPER



13. The table shows values of $y = x^3 + 1$ for values of x from -3 to 3 .

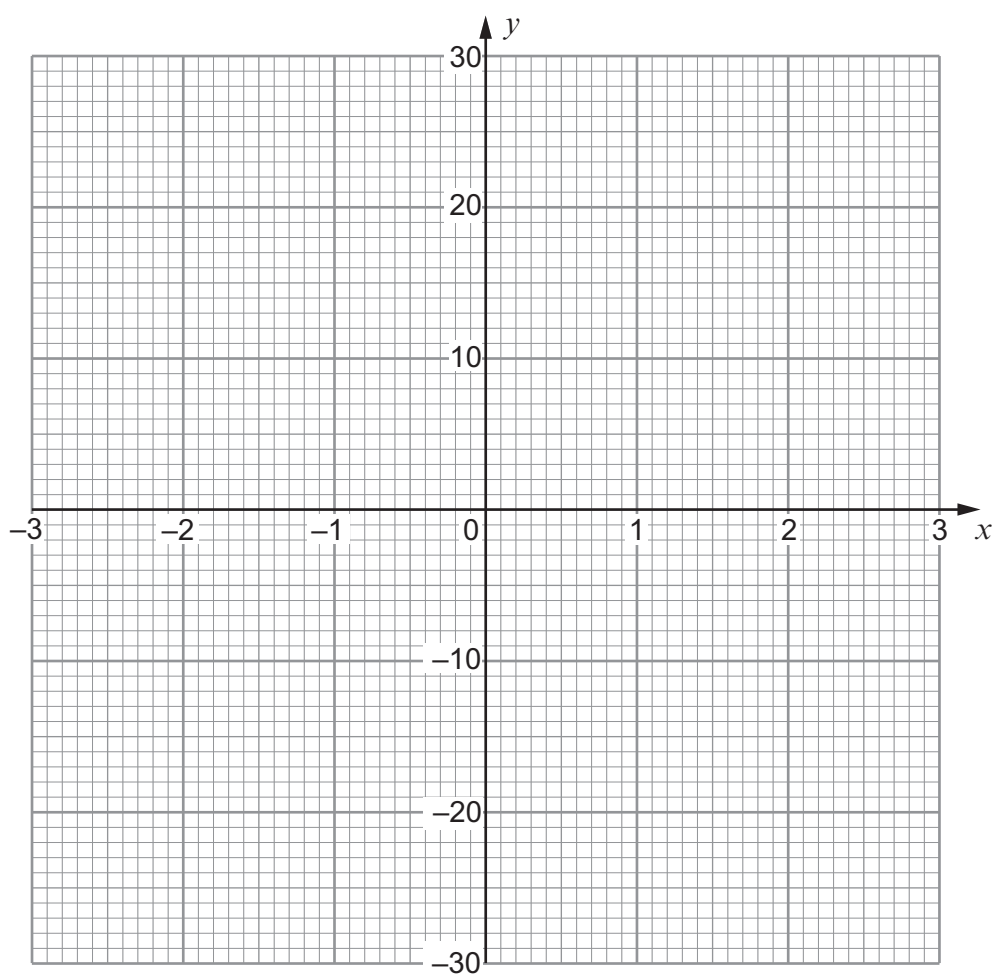
x	-3	-2	-1	0	1	2	3
$y = x^3 + 1$	-26	-7		1	2	9	28

(a) Complete the table above.

[1]

(b) On the graph paper below, draw the graph of $y = x^3 + 1$ for the values of x from -3 to 3 .

[2]



(c) Draw the line $y = -10$ on your graph paper and write down the x -coordinate of the point where this line intersects the curve $y = x^3 + 1$.

[2]

END OF PAPER