

5. The table shows some of the values of $y = 3x^2 + x - 5$ for values of x from -3 to 3 .

(a) Complete the table by finding the value of y for $x = -2$.

x	-3	-2	-1	0	1	2	3
$y = 3x^2 + x - 5$	19		-3	-5	-1	9	25



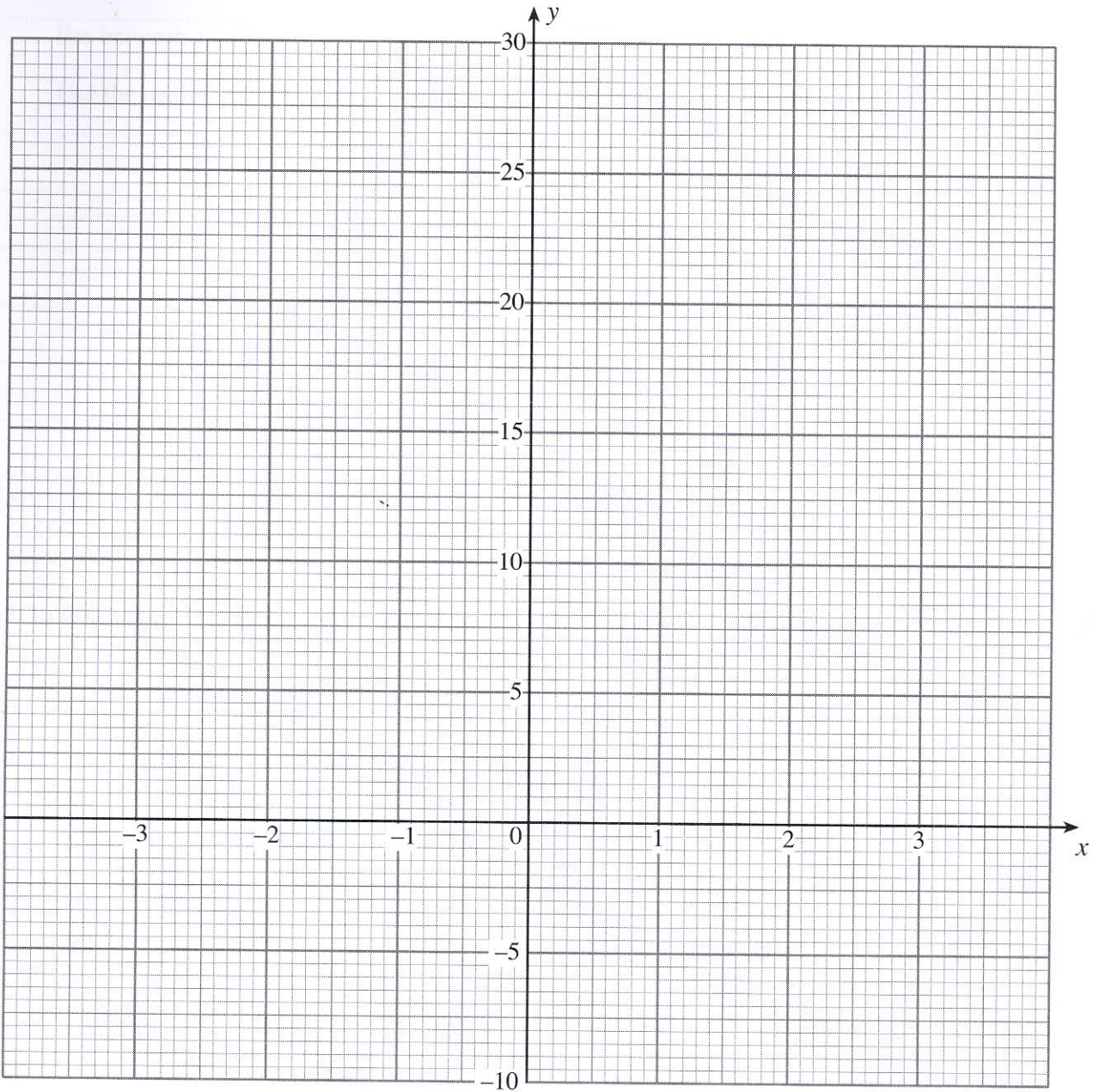
[1]

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

(c) Draw the line $y = 11$ on your graph paper and write down the x -values of the points where your two graphs intersect.

[2]

For use with question 5.



2. The table shows some of the values of $y = 2x^2 - 5x - 3$ for values of x from -2 to 4 .

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

x	-2	-1	0	1	2	3	4
$y = 2x^2 - 5x - 3$	15		-3	-6	-5	0	9



(b) On the graph paper opposite, draw the graph of $y = 2x^2 - 5x - 3$ for values of x between -2 and 4 .

[1]

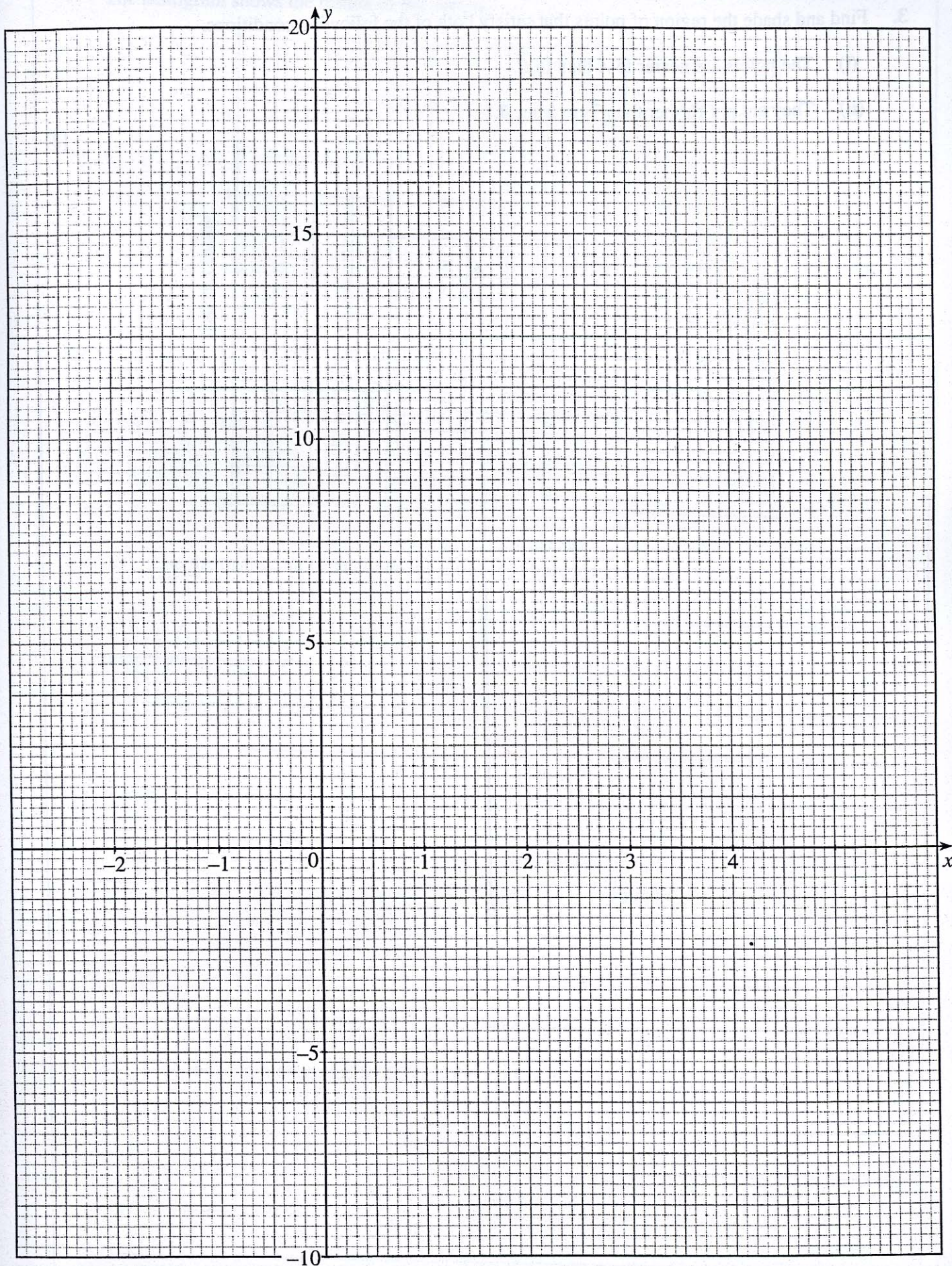
(c) Draw the line $y = 3$ on the graph paper and write down the x -values of the points where your two graphs intersect.

[3]

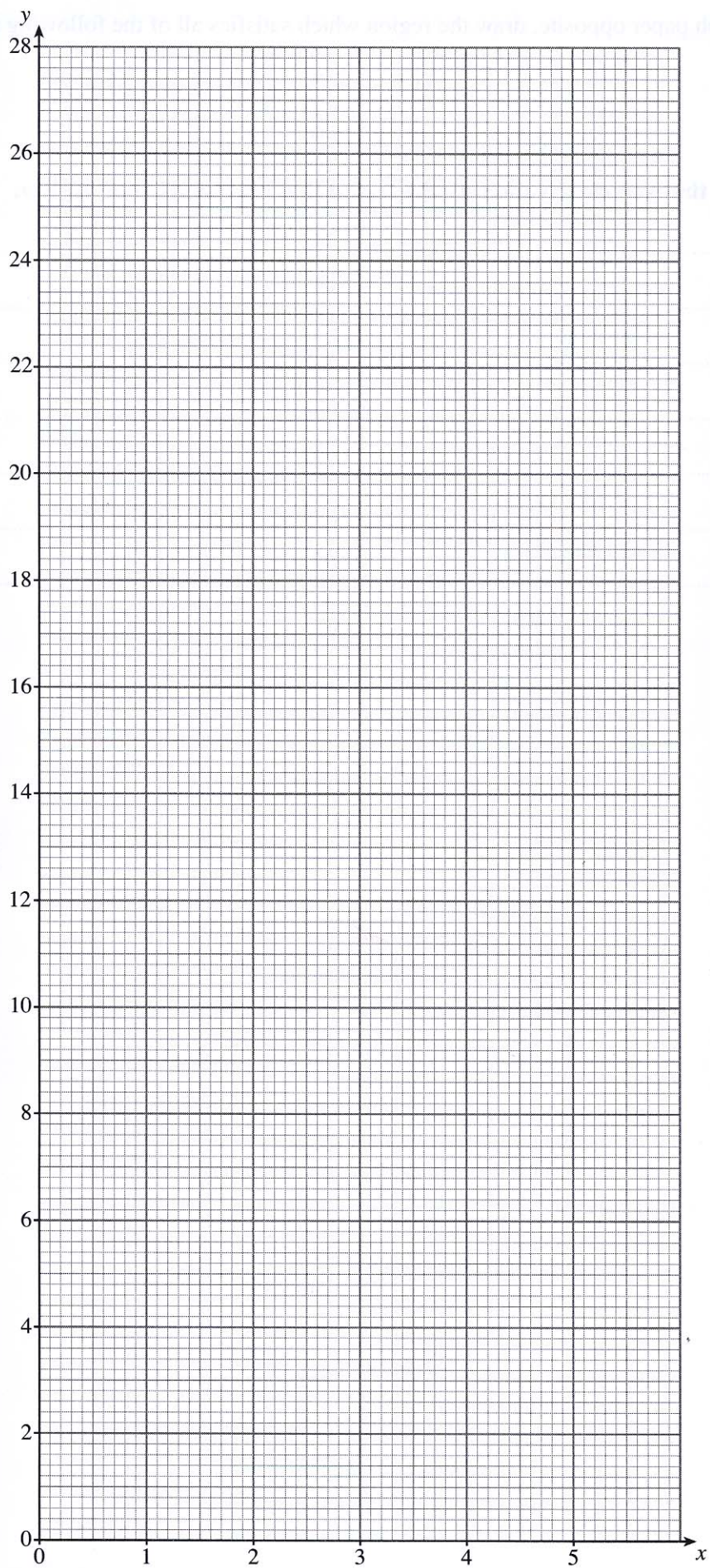
(d) Write down the equation in x whose solutions are the x -values you found in (c).

[2]

[1]



For use with Question 16.



16. The table shows some of the values of $y = 3x + \frac{10}{x}$ for values of x from 1 to 5.

(a) Complete the table by finding the value of y when $x = 1$ and $x = 2$.

x	1	2	3	4	5
y			12.33	14.5	17

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[1]

(b) On the graph paper opposite, draw the graph of $y = 3x + \frac{10}{x}$ for values of x between 1 and 5. [1]

(c) Find the coordinates of the point of intersection of $y = 3x + \frac{10}{x}$ and $y = 27 - 4x$ which lies between $x = 1$ and $x = 5$.

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[2]

15. The graph of $y = x^2 - x - 5$ has been drawn on the graph paper opposite.

(a) Use the graph of $y = x^2 - x - 5$ to estimate the gradient

(i) at the point where $x = \frac{1}{2}$,



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[1]

(ii) at the point where $x = 1$.

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[3]

(b) On the same axes plot the graph of $y = -x^2$ for values of x from $x = -2$ to $x = 2$.

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[2]

(c) Use the graphs of $y = x^2 - x - 5$ and $y = -x^2$ to solve $2x^2 - x - 5 = 0$.

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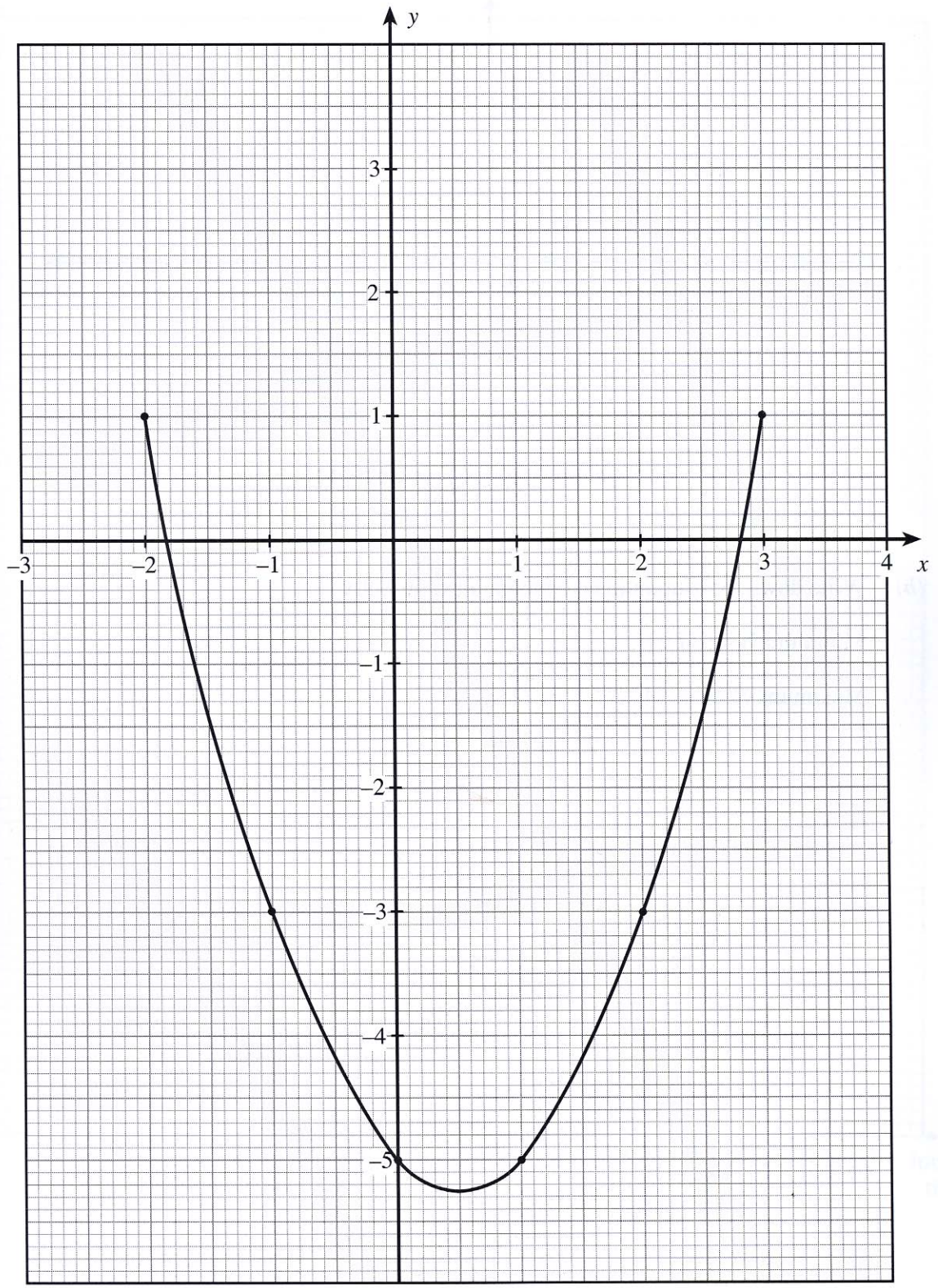
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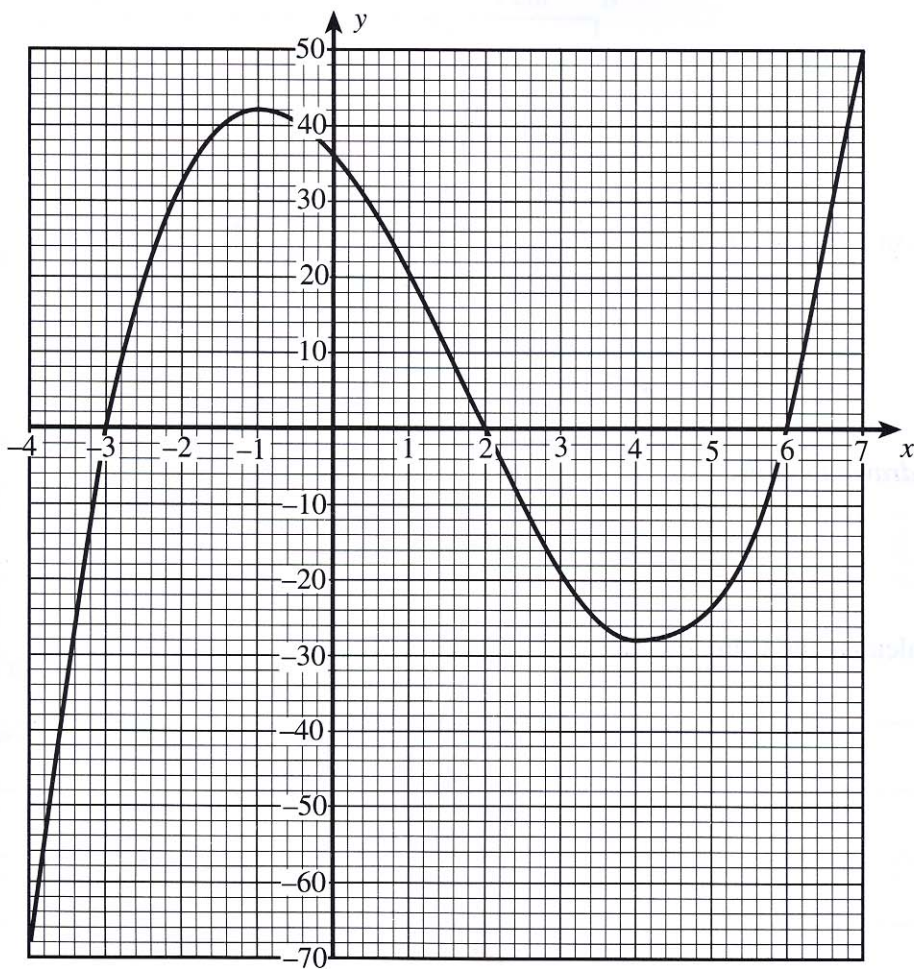
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[2]

For use with Question 15



16. The graph of $y = x^3 - 5x^2 - 12x + 36$, for values of x between $x = -4$ and $x = 7$, has been drawn below.



(a) Use the graph to solve the equation $x^3 - 5x^2 - 12x + 36 = 0$.



[1]

(b) Using the graph, estimate the gradient of the curve $y = x^3 - 5x^2 - 12x + 36$ when $x = 5$.

[3]

(c) By drawing an appropriate line on the graph, solve the equation $x^3 - 5x^2 - 7x + 10 = 0$.

[3]

(d) Use the trapezium rule with 5 strips to estimate the area enclosed by the x -axis and the curve between $x = -3$ and $x = 2$.

[4]