Higher Maths Summer 2019 P1 Q2
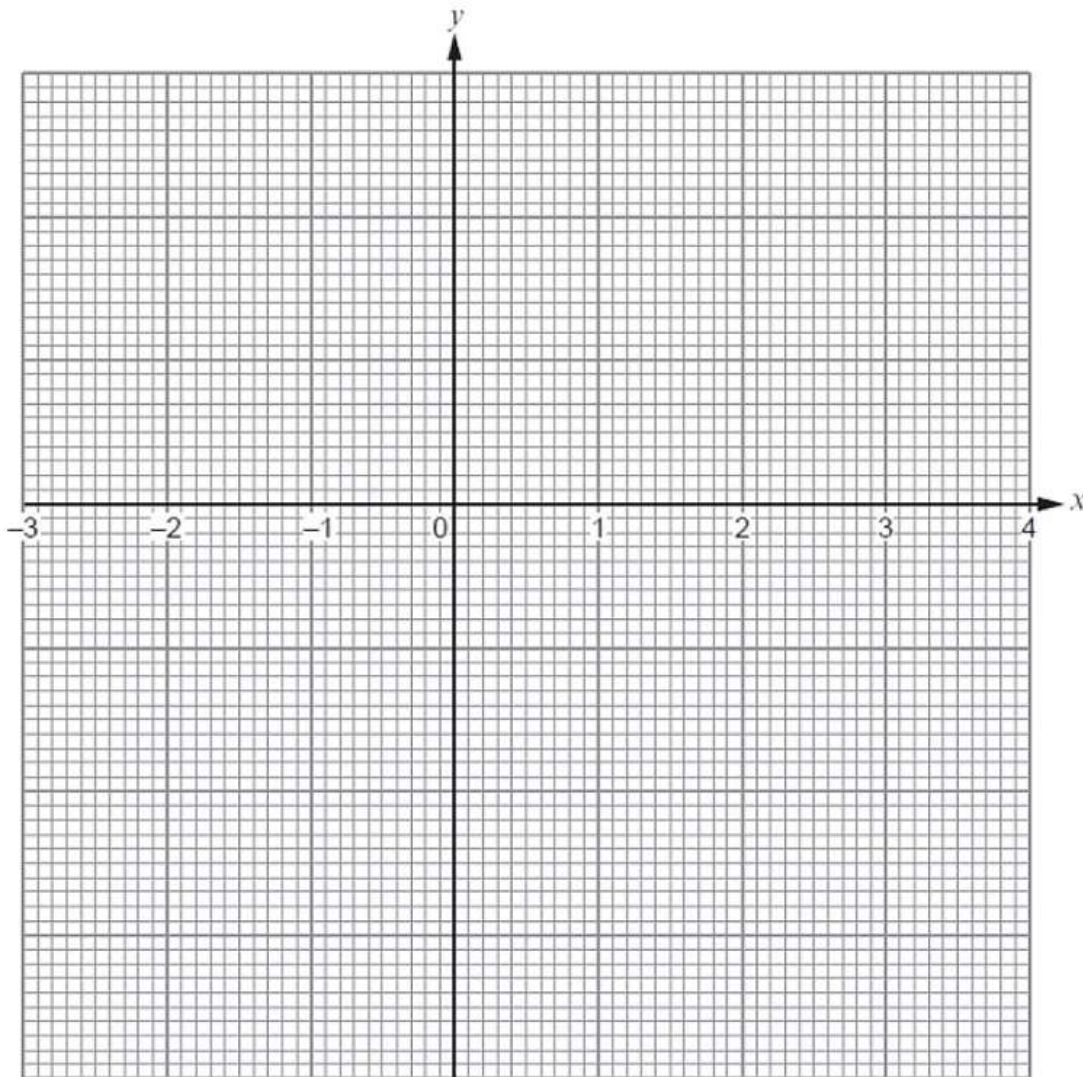
Complete the table below.
Draw the graph of $y = 3x^2 - 25$ for values of x between −3 and 4.
Use the graph paper below.
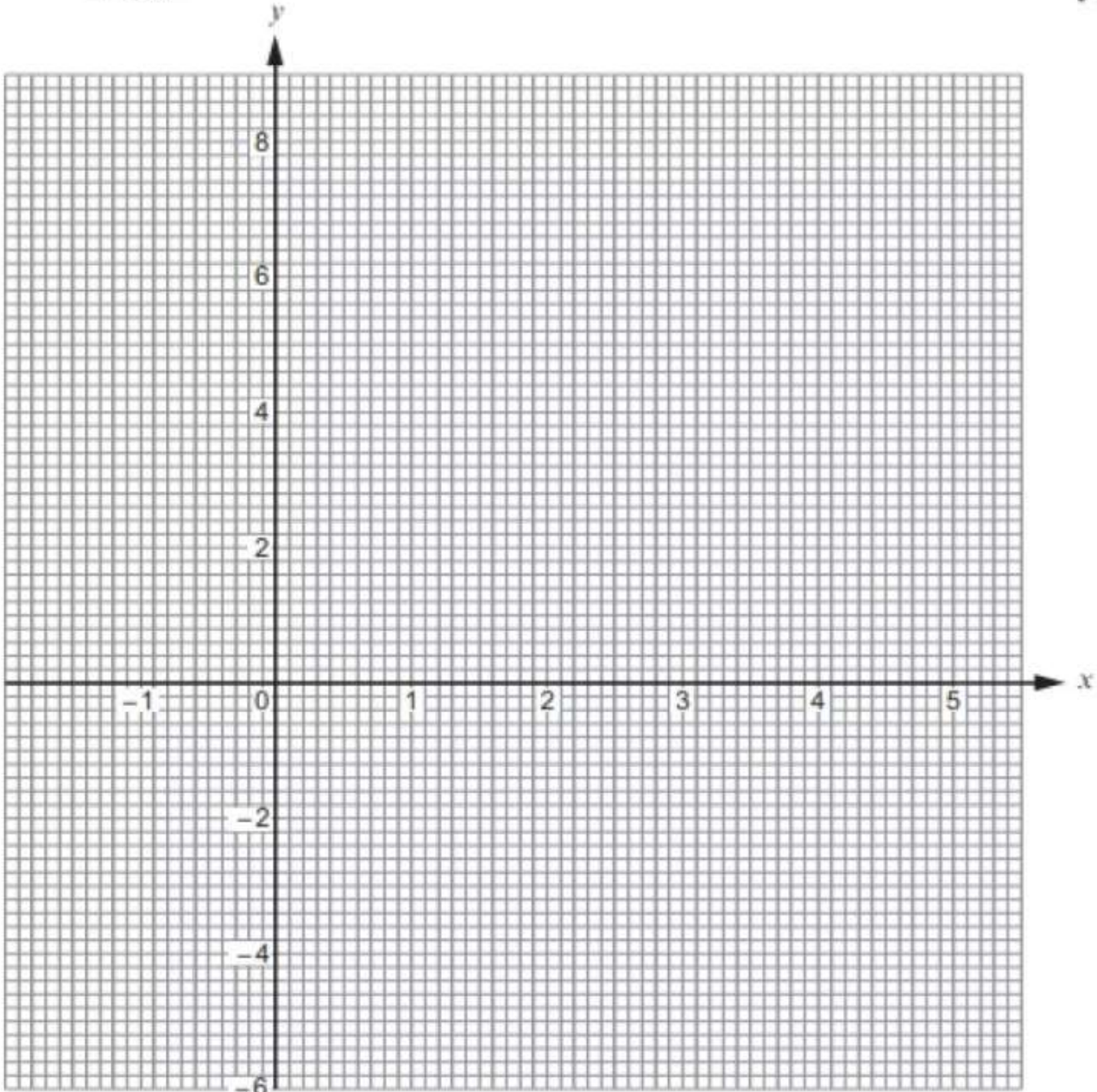You must choose a suitable scale for the y-axis.   [4]

x	−3	−2	−1	0	1	2	3	4
$y = 3x^2 - 25$	2		−22	−25	−22	−13	2	23

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$y = x^2 - 5x + 2$	8	2	-2	-4		-2	2

(a)   Complete the table above.   [1]

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

(c)   Draw the line $y = -3$ on the graph paper.

        Write down the values of x where the line $y = -3$ cuts the curve $y = x^2 - 5x + 2$.
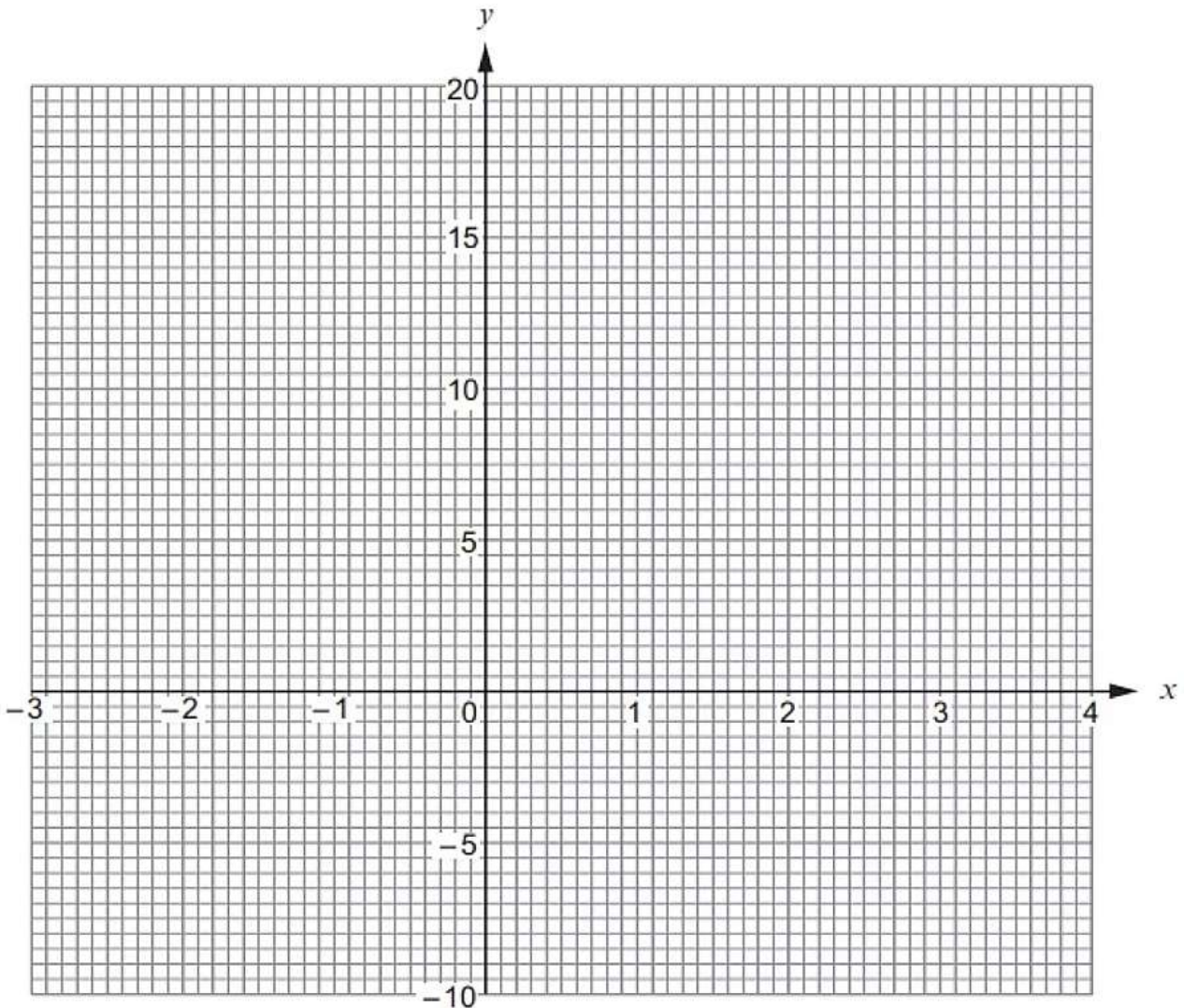
Higher Maths Nov 2016 P1 Q2

(a)   The table below shows some of the values of $y = 2x^2 - 5x - 1$ for values of x from
−2 to 4.

Complete the table by finding the value of y for $x = -1$ and for $x = 2$.   [2]

x	−2	−1	0	1	2	3	4
$y = 2x^2 - 5x - 1$	17		−1	−4		2	11

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

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

Higher Maths Nov 2018 P2 Q3

The table below shows some of the values of $y = x^2 + 4x - 1$ for values of x from -5 to 2.

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

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

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

(c)   Draw the line $y = 2$ on the graph paper.
Write down the values of x where the line $y = 2$ cuts the curve $y = x^2 + 4x - 1$.   [2]

Values of x are   .... and ....
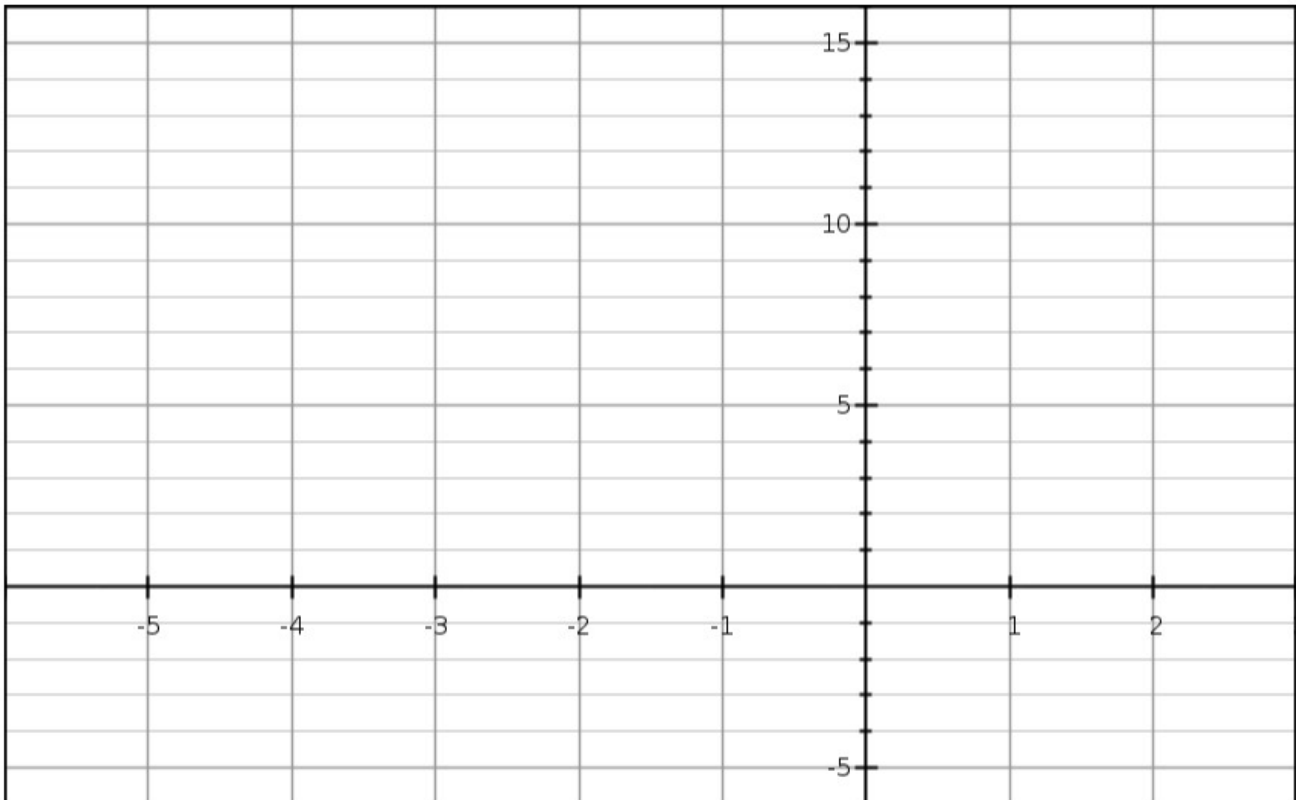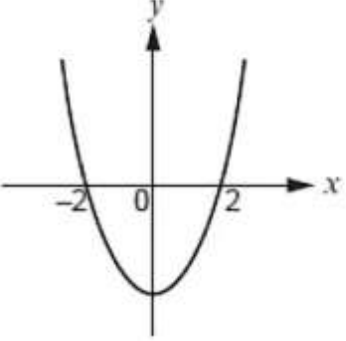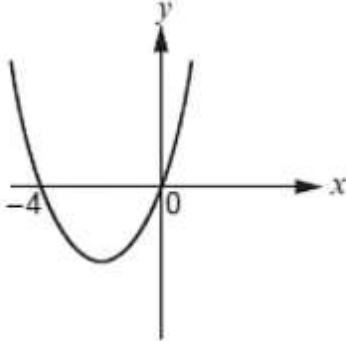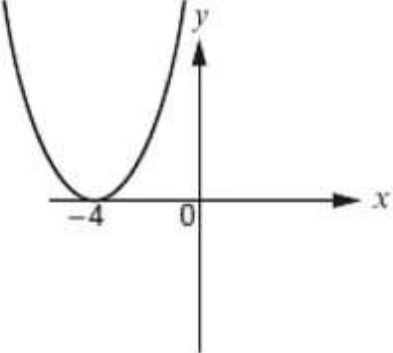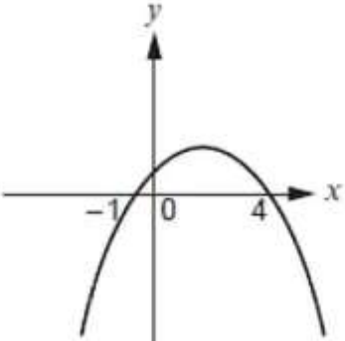
The graph of $y = x^2 + x - 1$ is shown below for values of x from −2 to 3.
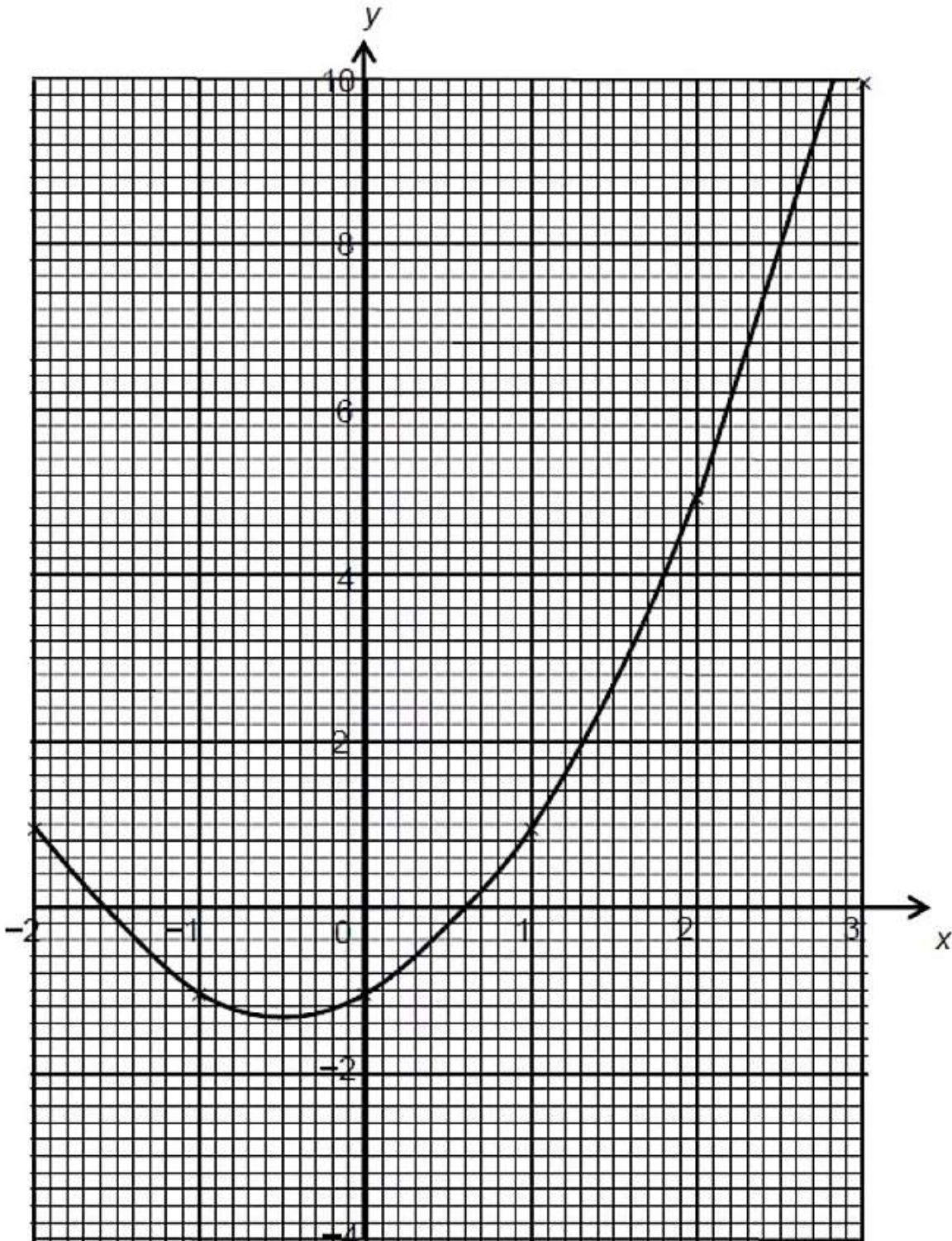
By drawing an appropriate straight line, use the graph to solve the equation $x^2 + 0 \cdot 5x - 2 = 0$.

[3]

Higher Maths Summer 2019 P2 Q15

Four quadratic graphs are sketched below.
Draw a line connecting each graph to its equation.
One has been completed for you.

[2]

<u>Graph</u>
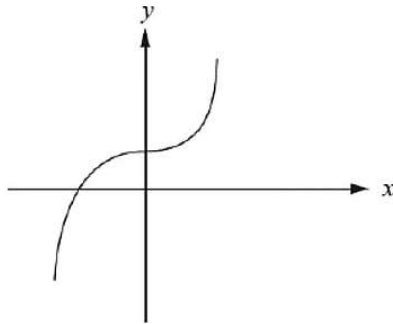
<u>Equation</u>

$$y = (x + 1)(x - 4)$$

$$y = (x - 4)^2$$

$$y = x(x + 4)$$

$$y = (x - 1)(x + 4)$$

$$y = (x - 2)(x + 2)$$

$$y = x(x - 4)$$

$$y = (x + 1)(4 - x)$$

$$y = (1 - x)(x + 4)$$

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

Higher Maths Sample 1 P2 Q15c

Circle the correct answer for each of the following questions.

(c)   The graph

can be represented by the equation,

$$y = ax^3 + b \qquad y = ax^2 + b \qquad y = ax + b \qquad y = \frac{a}{x} + b \qquad y = ax^2 + bx$$

where a and b are both positive numbers.   [1]

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Higher Maths Nov 2016 P2 Q15

15. Circle either TRUE or FALSE for each statement given below.   [2]

GRAPH	STATEMENT		
	The equation of this graph could be $y = -x^3 - 2$.	TRUE	FALSE
	The equation of this graph could be $y = x^3 - 9x$.	TRUE	FALSE
	The equation of this graph could be $y = x^{-1}$.	TRUE	FALSE
	The equation of this graph could be $y = x^3 + 4$.	TRUE	FALSE

Higher Maths Summer 2018 P1 Q16

(a)   Draw the graph of the curve $y = 2^x$ for values of x from -2 to 2.
        Use the graph paper below.   [3]
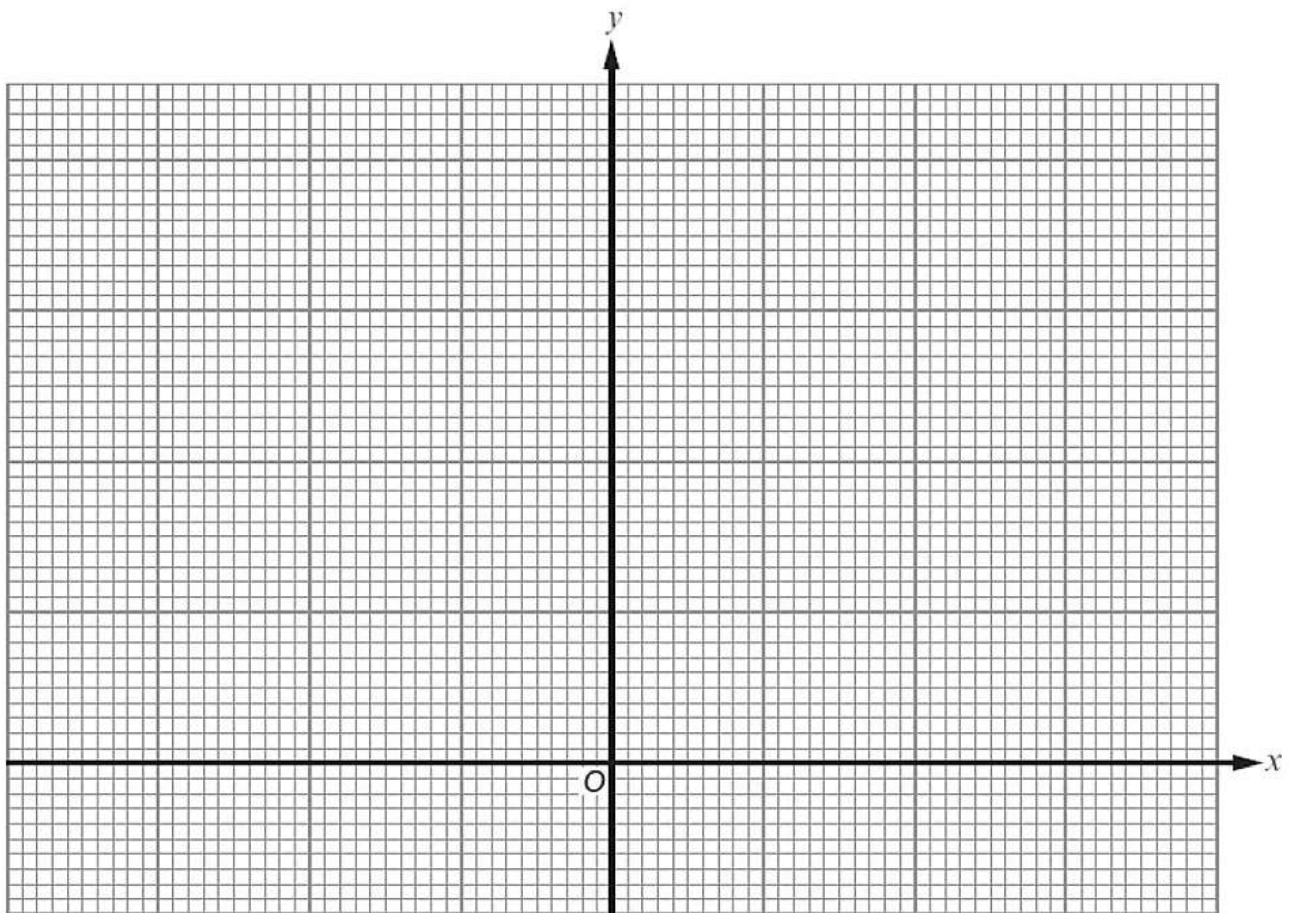
(b)   Use your graph to find the value of $2^{1 \cdot 4}$.   [1]

(c)   Use your graph to solve the equation $2^x = 1 \cdot 4$.   [1]