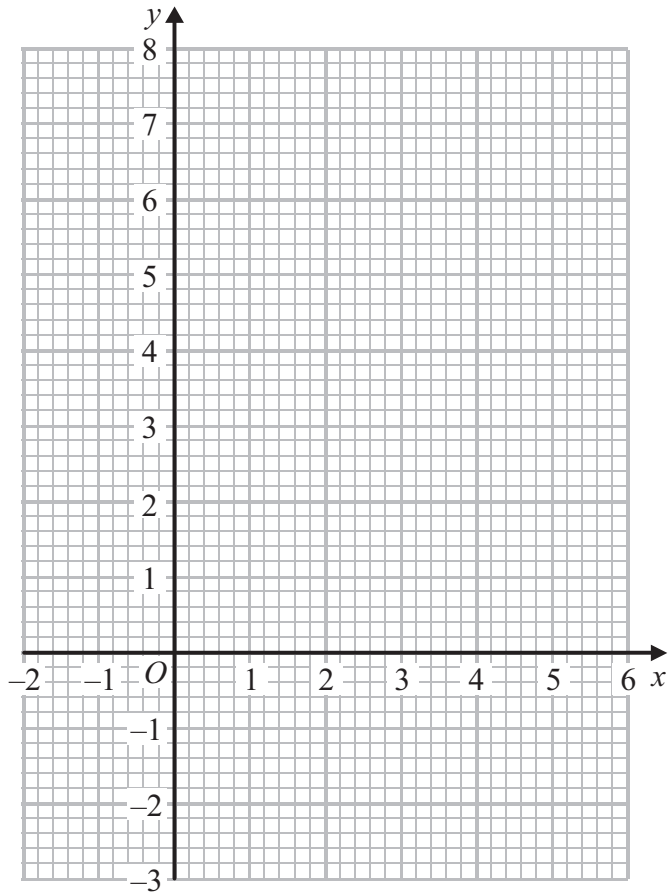
1. **[4 marks]**

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

x	–1	0	1	2	3	4	5
y		2		–2	–1		

(2)

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



(2)

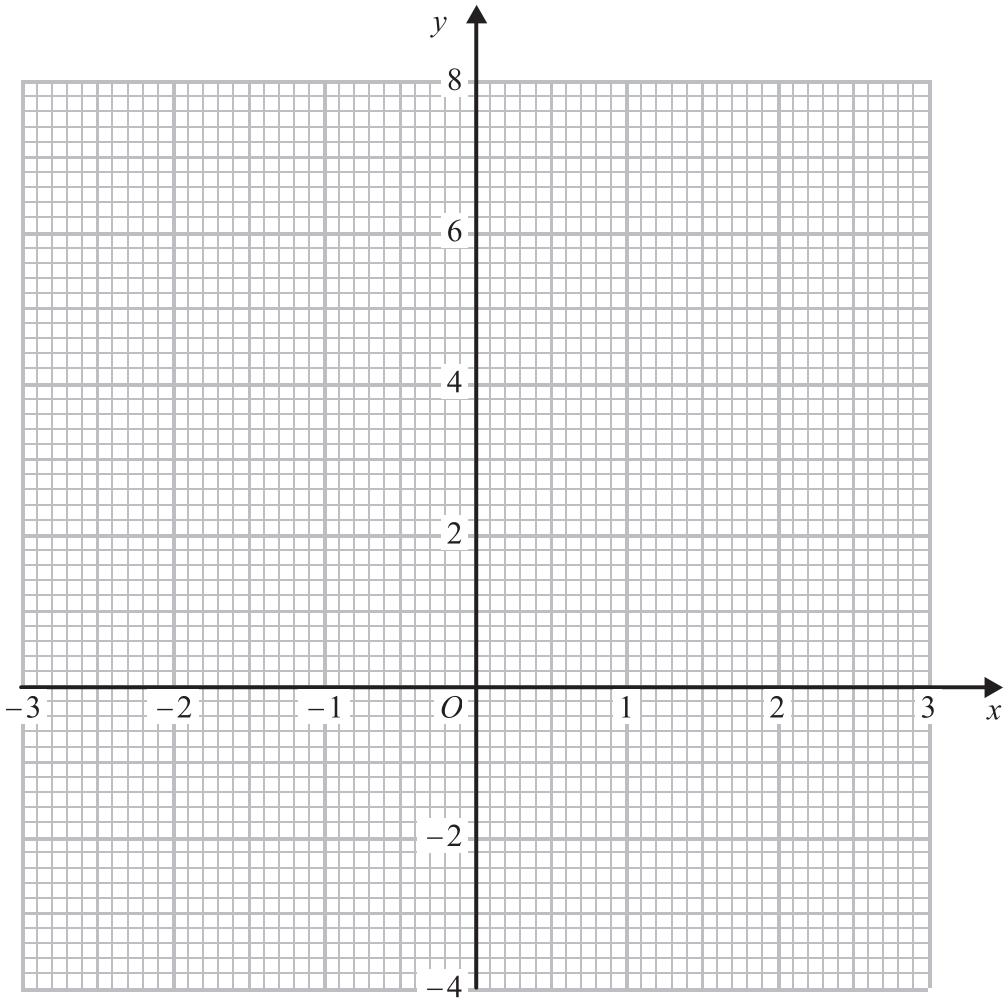
2. **[4 marks]**

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

x	−3	−2	−1	0	1	2	3
y			−1				

(2)

(b) On the grid, draw the graph of $y = x^2 - 2$



(2)

3. **[4 marks]**

For $y = x^3 - 6x^2 + 20$

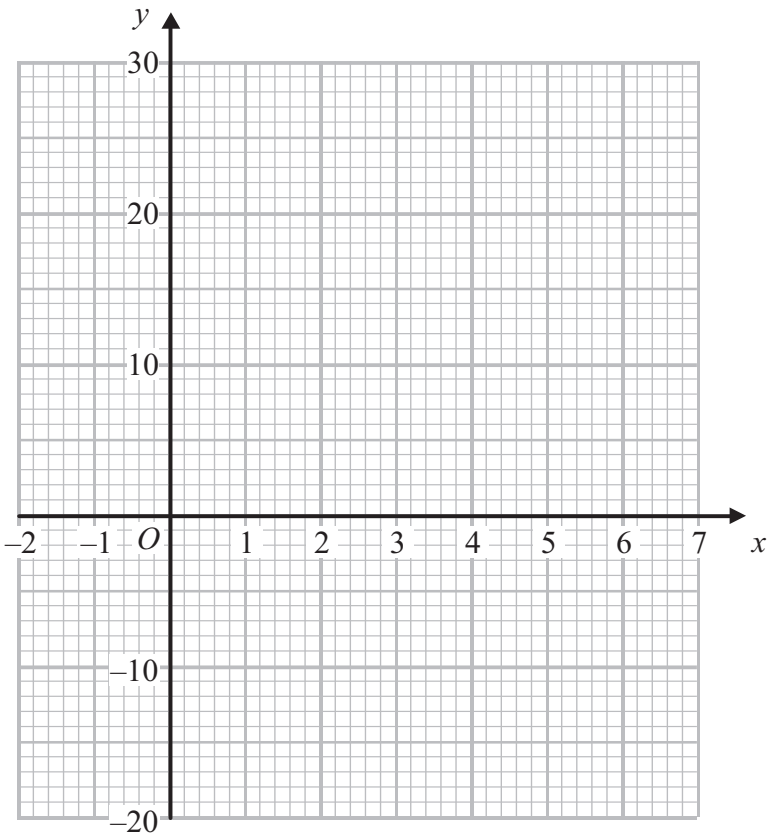
(a) (i) show that $y = 4$ when $x = 2$

(ii) complete the table of values

x	−1	0	1	2	3	4	5	6
y		20	15		−7	−12		20

(2)

(b) On the grid, draw the graph of $y = x^3 - 6x^2 + 20$ for values of x from –1 to 6



(2)

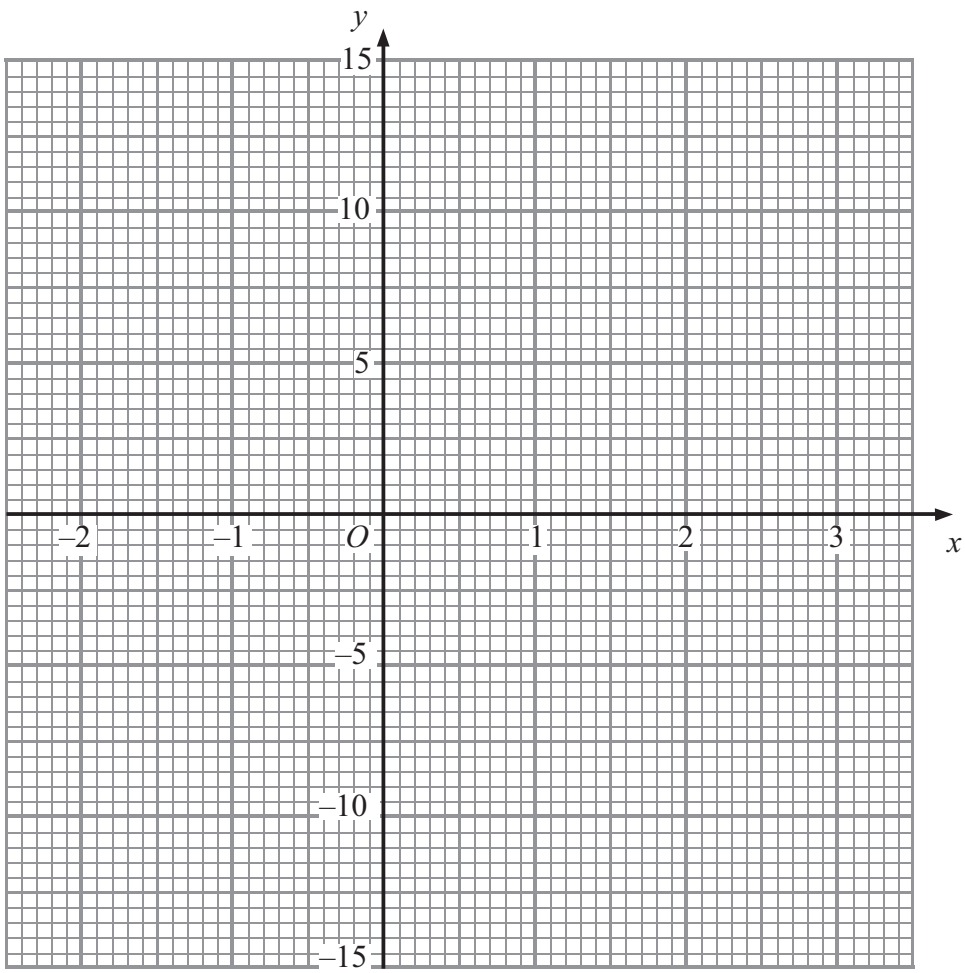
4. **[4 marks]**

(a) Complete the table of values for $y = x^3 - 3x^2 + 12$

x	–2	–1	0	1	2	3
y		8				

(2)

(b) On the grid, draw the graph of $y = x^3 - 3x^2 + 12$



(2)

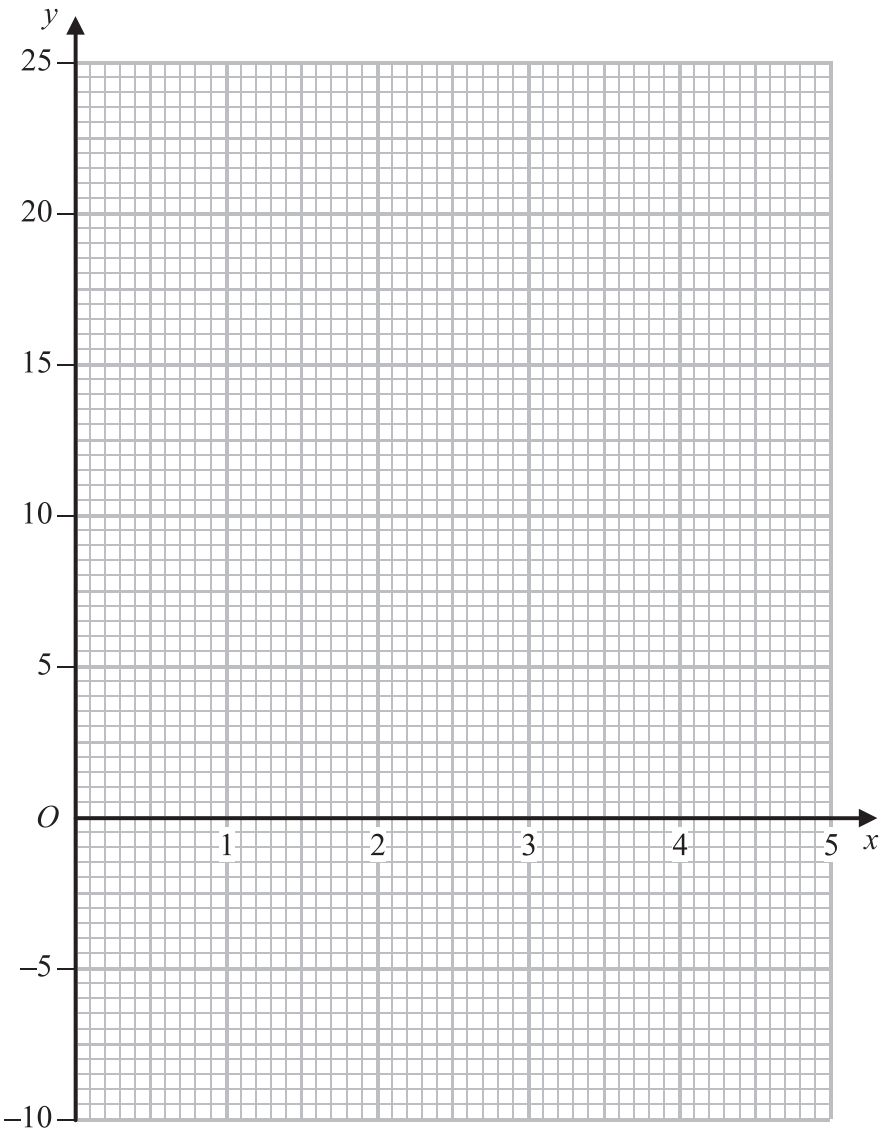
5. **[4 marks]**

(a) Complete the table of values for $y = x^2 - \frac{3}{x}$

x	0.5	1	1.5	2	3	4	5
y	−5.75	−2					24.4

(2)

(b) On the grid, draw the graph of $y = x^2 - \frac{3}{x}$ for $0.5 \leqslant x \leqslant 5$



(2)

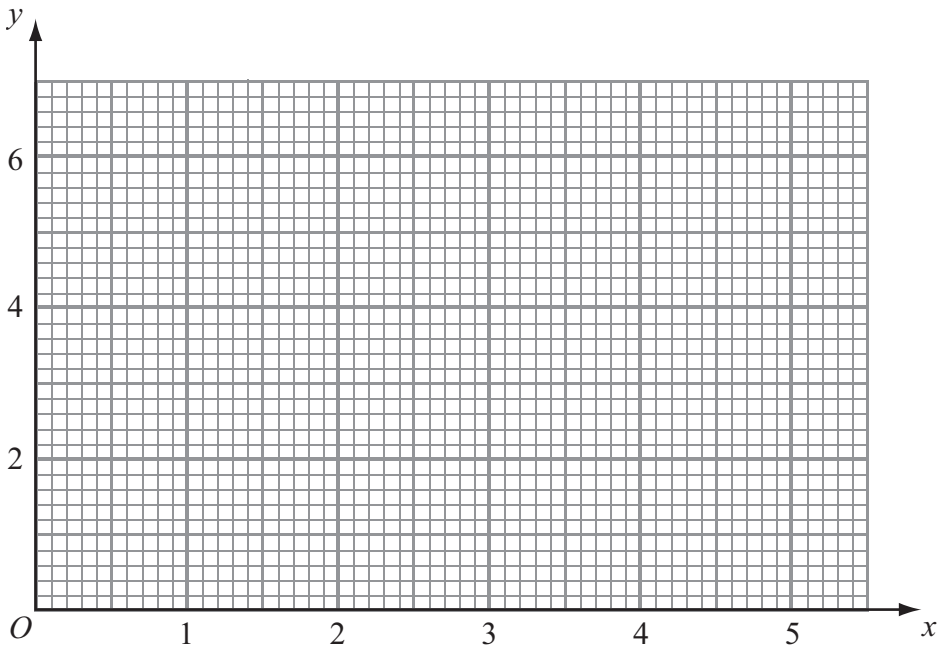
6. **[4 marks]**

(a) Complete the table of values for $y = x + \frac{1}{x^2}$

x	0.5	1	1.5	2	3	4	5
y		2		2.3			5.0

(2)

(b) On the grid, draw the graph of $y = x + \frac{1}{x^2}$ for $0.5 \leqslant x \leqslant 5$



(2)

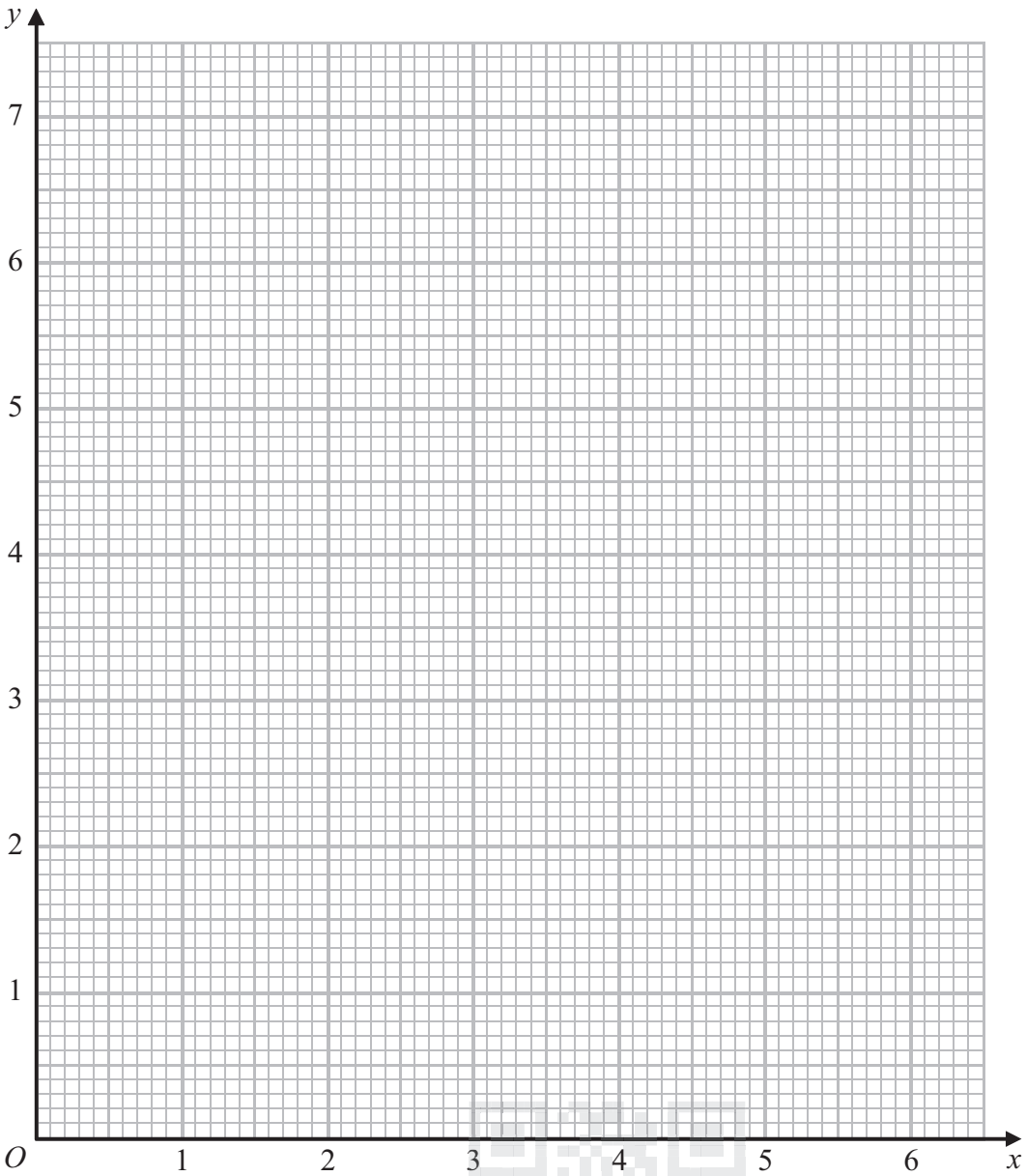
7. **[4 marks]**

(a) Complete the table of values for $y = \frac{1}{2}\left(x + \frac{9}{x}\right)$

x	1	1.5	2	3	4	5	6
y	5		3.25		3.125	3.4	

(2)

(b) Draw the graph of $y = \frac{1}{2}\left(x + \frac{9}{x}\right)$ for values of x from 1 to 6



(2)

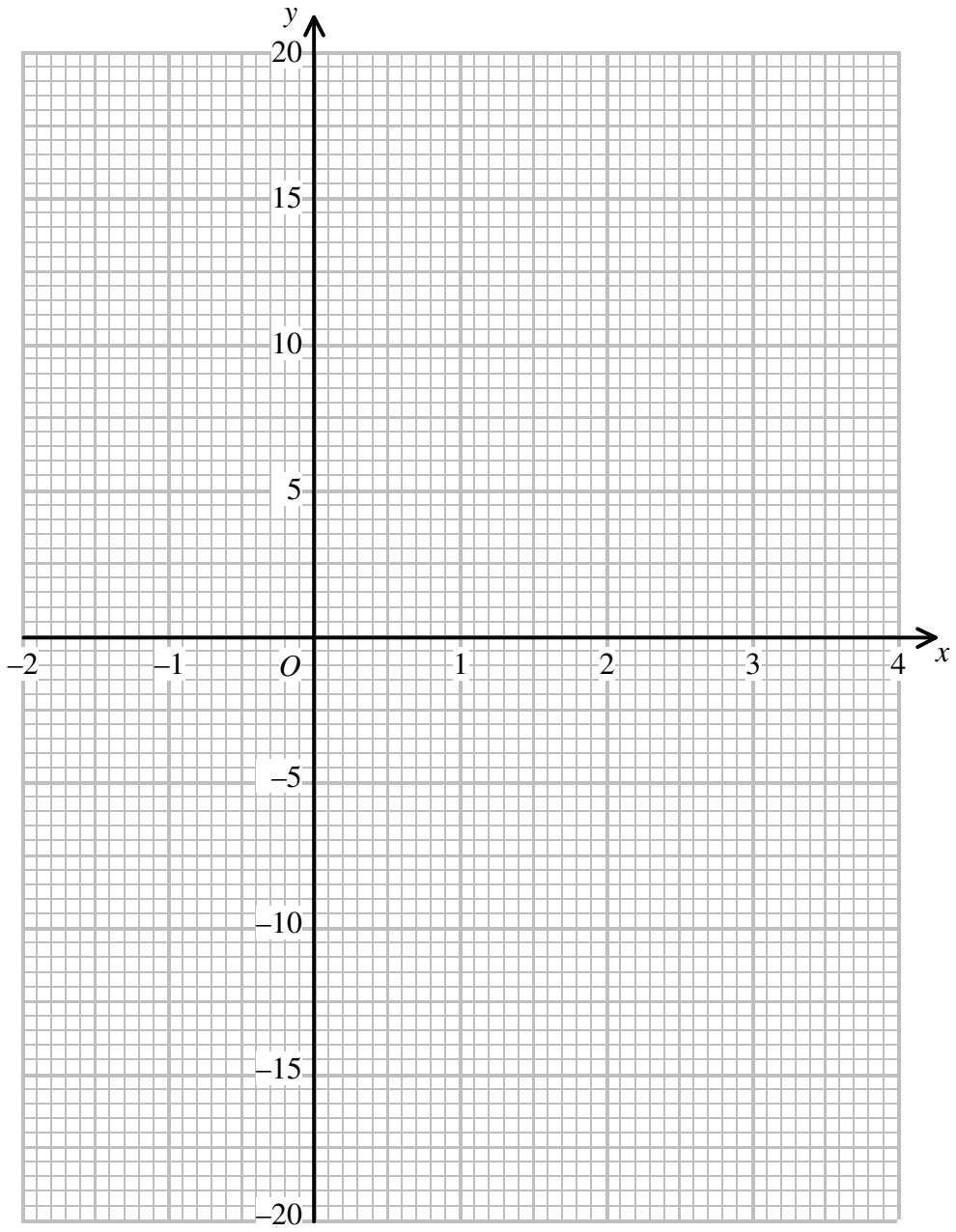
8. **[4 marks]**

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

x	–2	–1	0	1	2	3	4
y		–2					

(2)

(b) On the grid, draw the graph of $y = x^3 - 3x^2 + 2$



(2)

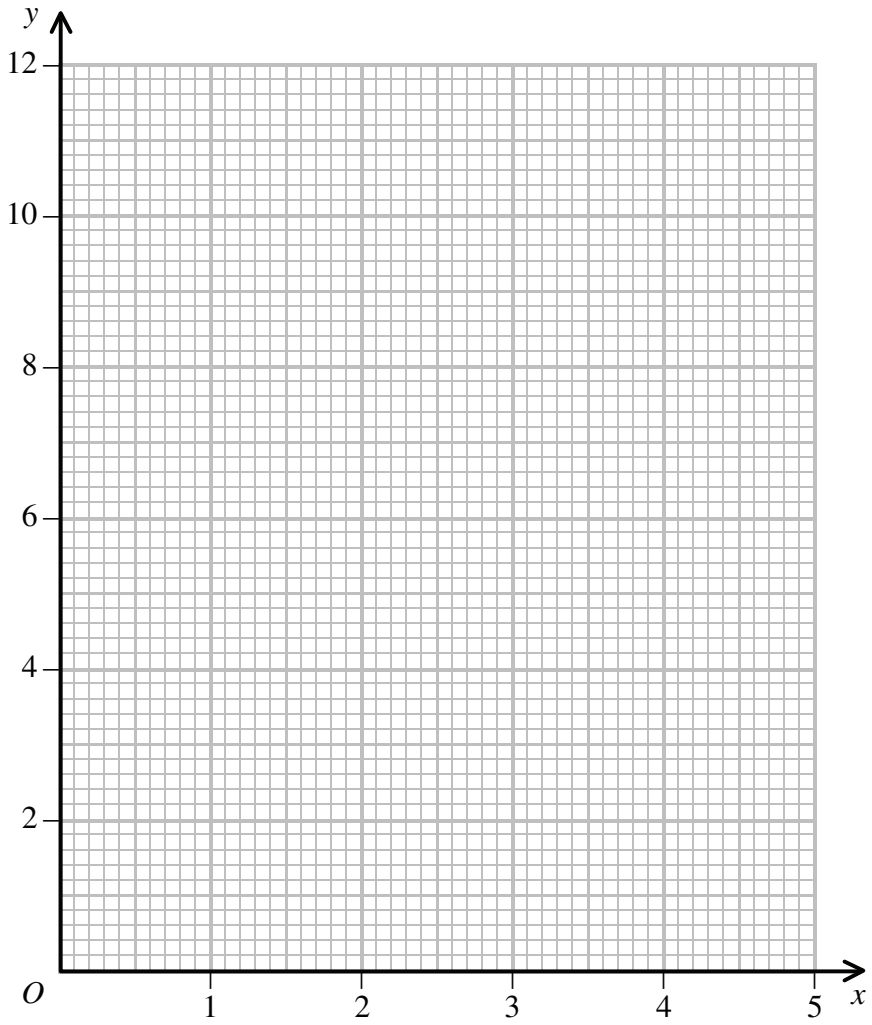
9. **[4 marks]**

(a) Complete the table of values for $y = x + \frac{2}{x}$

x	0.2	0.4	0.6	0.8	1	1.5	2	3	4	5
y	10.2		3.9		3	2.8		3.7		5.2

(2)

(b) On the grid, draw the graph of $y = x + \frac{2}{x}$ for $0.2 \leq x \leq 5$

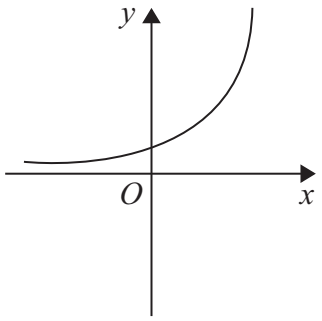


(2)

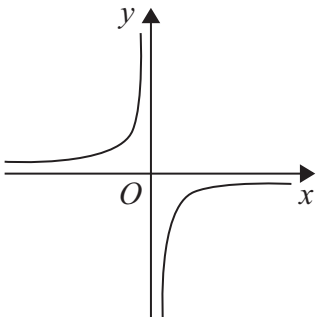
10. **[3 marks]**

Here are some graphs.

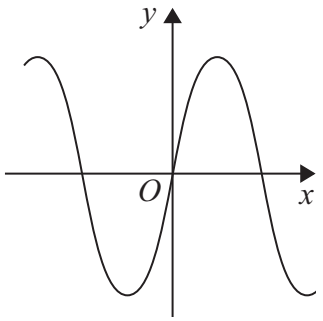
A



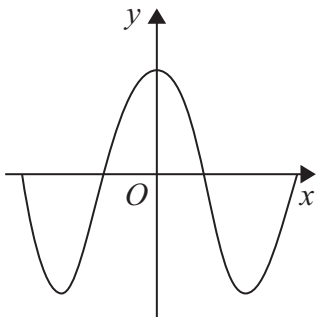
B



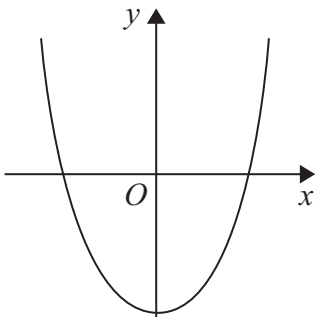
C



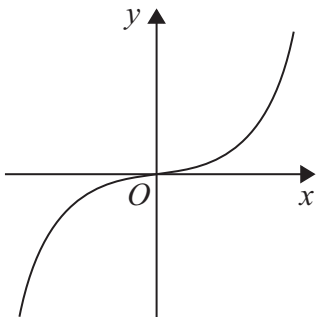
D



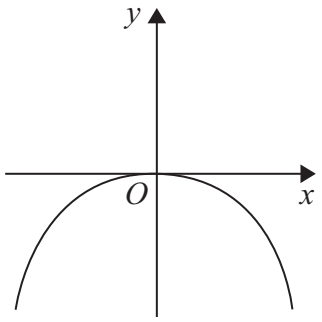
E



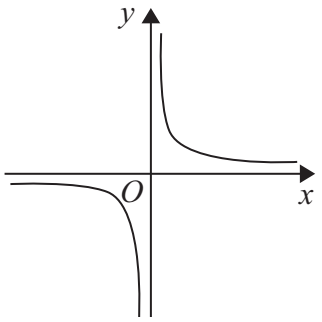
F



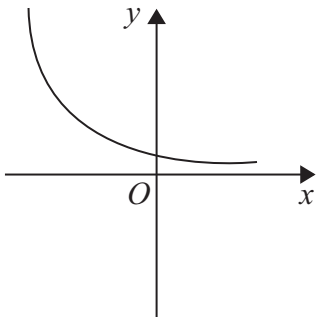
G



H



I



In the table below, match each equation with the letter of its graph.

Equation	Graph
$y = \sin x$	
$y = x^3 + 4x$	
$y = 2^x$	
$y = \frac{4}{x}$	

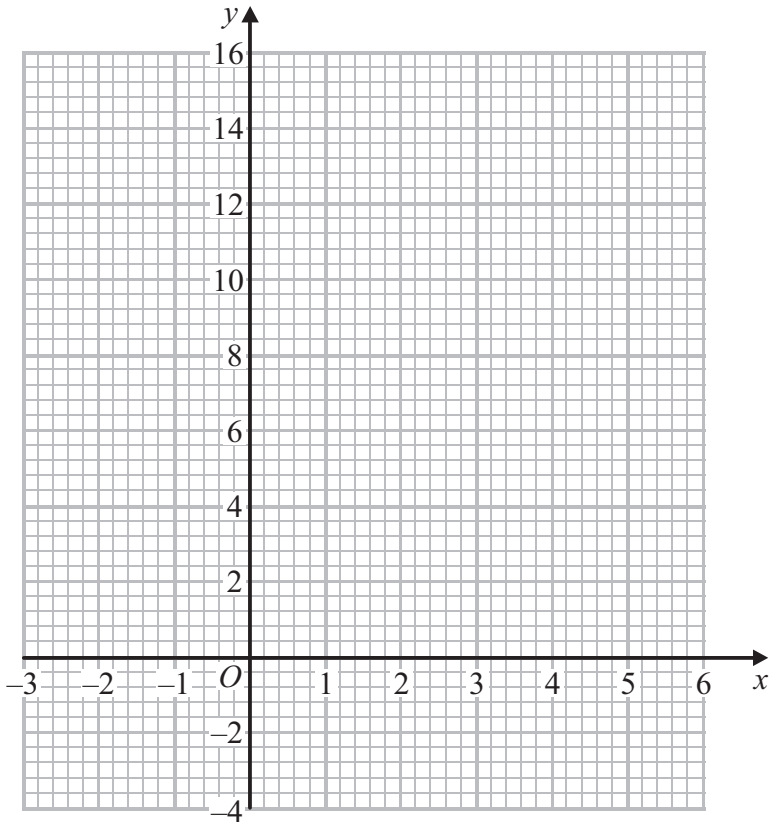
11. **[5 marks]**

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

x	−2	−1	0	1	2	3	4	5
y	14		2			−1	2	

(2)

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



(2)

The point $P\ (k, 4)$ where $k > 0$ lies on the graph of $y = x^2 - 4x + 2$

(c) Use your graph to find an estimate for the value of k.

.....

(1)

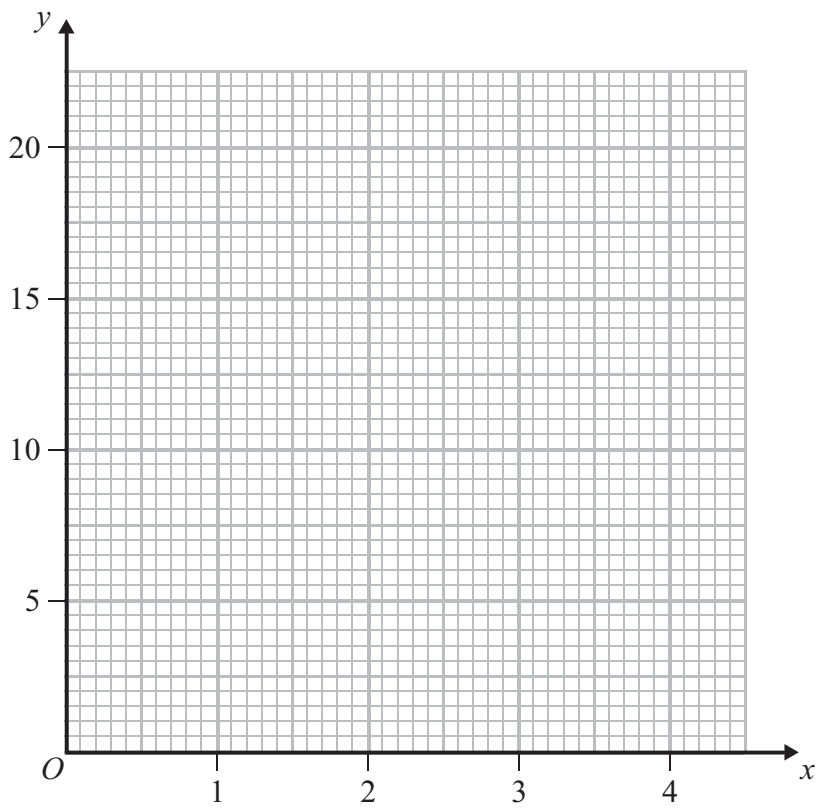
12. **[5 marks]**

(a) Complete the table of values for $y = x^2 + \frac{2}{x}$

x	0.1	0.2	0.5	1	1.5	2	3	4
y	20.01	10.04		3	3.58	5	9.67	

(1)

(b) On the grid, draw the graph of $y = x^2 + \frac{2}{x}$ for $0.1 \leqslant x \leqslant 4$



(2)

(c) Use your graph to find estimates for the solutions of $x^2 + \frac{2}{x} = 14$ in the interval $0.1 \leqslant x \leqslant 4$

Give your estimates correct to 1 decimal place.

.....

(2)