

## Non-Calculator

**Q1.**

A point lies on the graph with equation  $y = x^2 + x$   
The  $x$ -coordinate of the point is  $-3$

Circle the coordinates of the point.

$(-3, -12)$

$(-3, -6)$

$(-3, 6)$

$(-3, 12)$

**(Total 1 mark)**

**Q2.**

The graph of  $y = x^2 + 2x - 3$  is drawn below.

Draw an appropriate **straight** line on the graph to work out the approximate solutions of

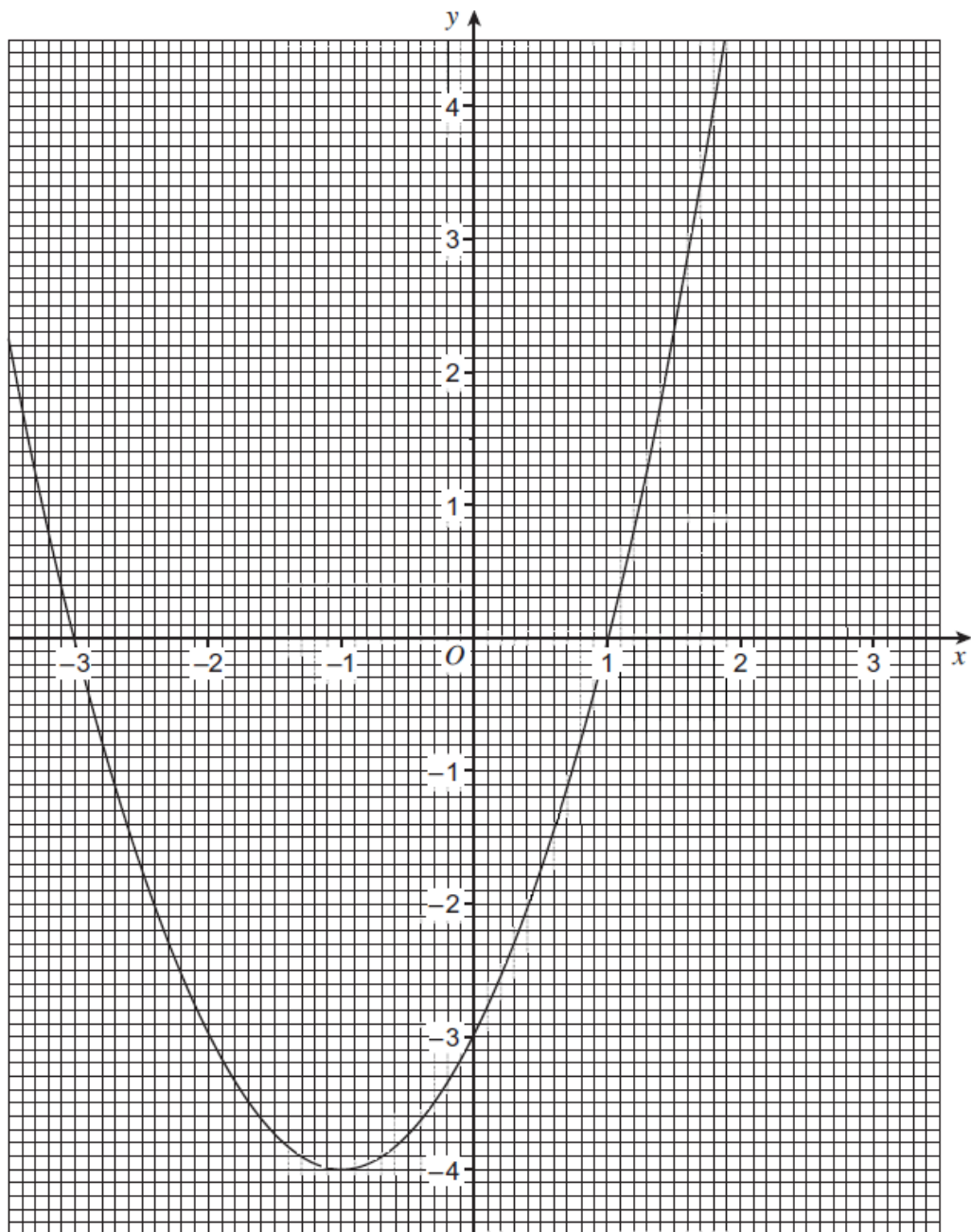
$$x^2 + x - 3 = 0$$

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Answer \_\_\_\_\_

$$y = x^2 + 2x - 3$$



(Total 3 marks)

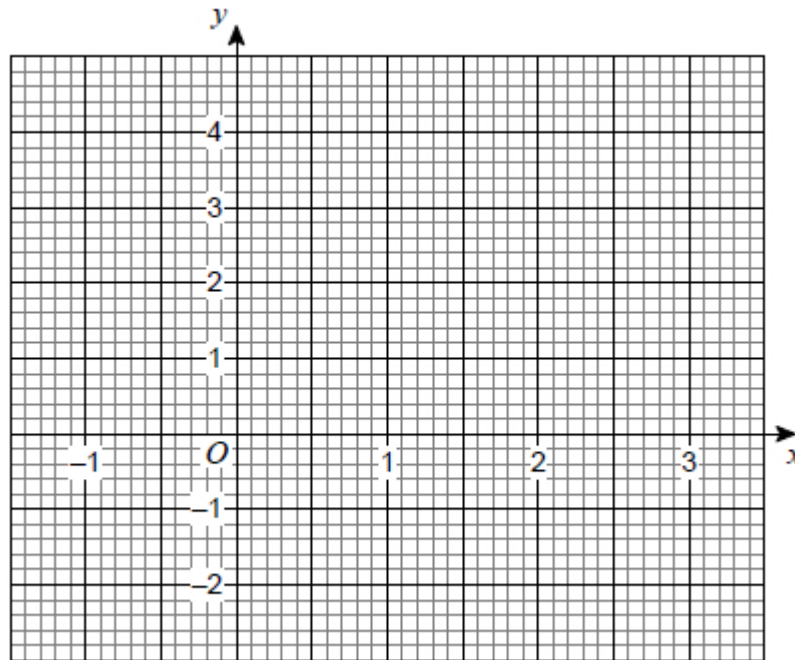
**Q3.**

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

$x$	-1	0	1	2	3
$y$		0	-1		

(2)

(b) Draw the graph of  $y = x^2 - 2x$  for values of  $x$  from -1 to 3



(2)

(c) Write down the coordinates of the turning point of the graph.

Answer (....., .....) )

(1)

(Total 5 marks)

**Q4.**

Circle the **two** roots of  $(2x + 3)(5x - 2) = 0$

$$-\frac{3}{2}$$

$$-\frac{2}{5}$$

$$\frac{2}{5}$$

$$\frac{3}{2}$$

(Total 1 mark)

## Calculator

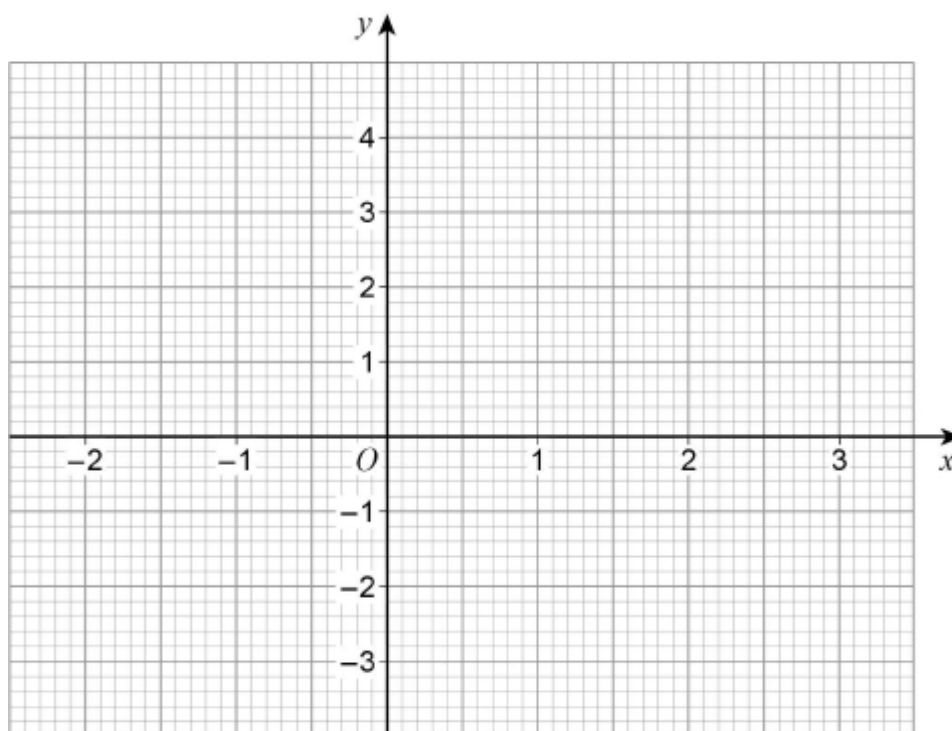
**Q5.**

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

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

(2)

- (b) Draw the graph of  $y = x^2 - x - 2$  for values of  $x$  from -2 to 3



(2)

(Total 4 marks)

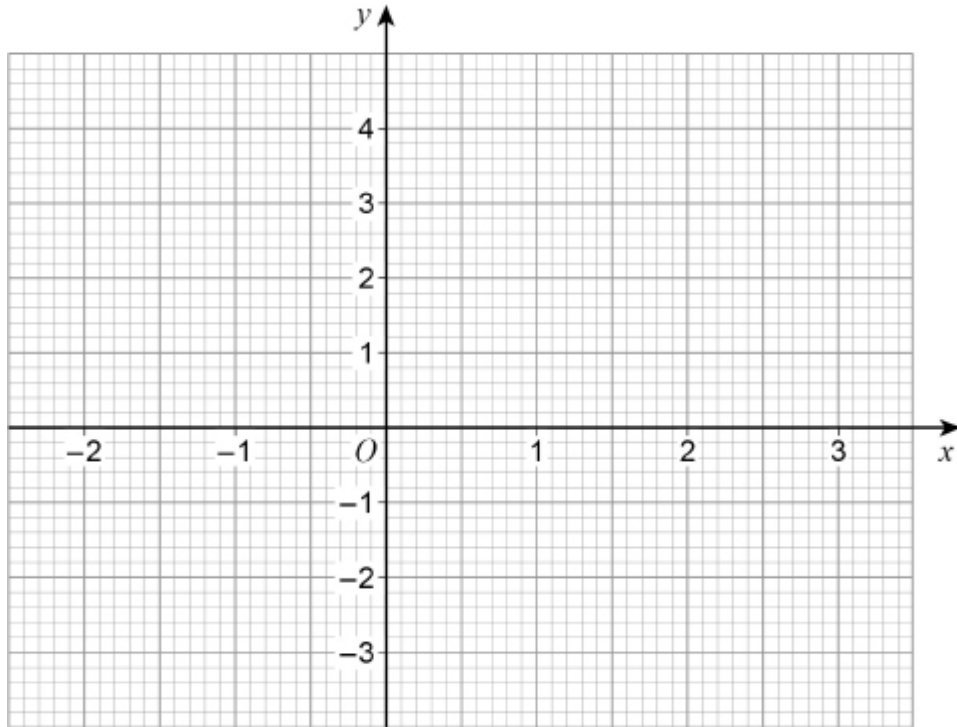
**Q6.**

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

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

(2)

(b) Draw the graph of  $y = x^2 - x - 2$  for values of  $x$  from -2 to 3



(2)

(c) Write down the  $x$ -coordinate of the turning point of the graph.

Answer \_\_\_\_\_

(1)

(Total 5 marks)

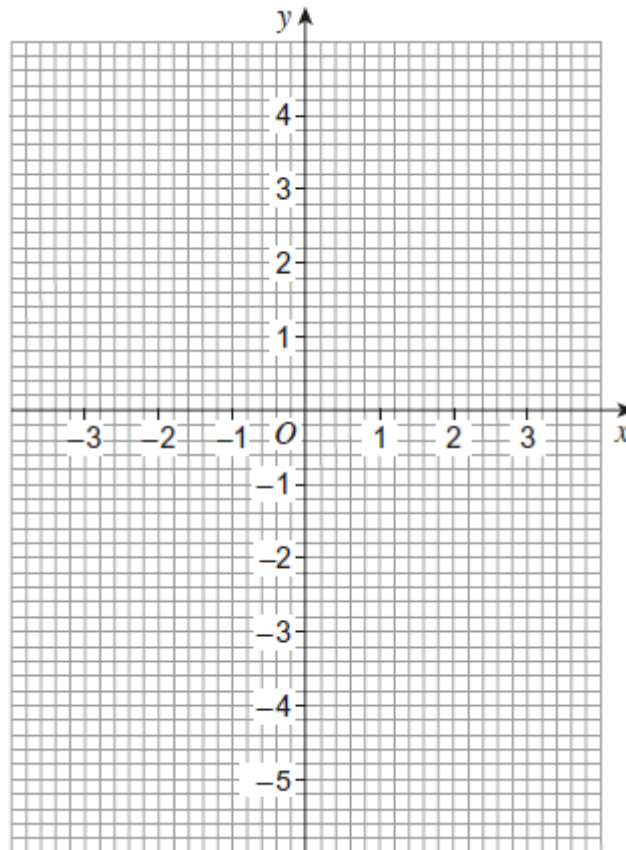
**Q7.**

- (a) Complete the table of values for  $y = x^2 - 5$  for values of  $x$  from  $-3$  to  $3$

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

(2)

- (b) Draw the graph of  $y = x^2 - 5$  for values of  $x$  from  $-3$  to  $3$



(2)

- (c) Use the graph of  $y = x^2 - 5$  to write down the values of  $x$  when  $y = 0$

Answer \_\_\_\_\_ and \_\_\_\_\_

(1)

(Total 5 marks)

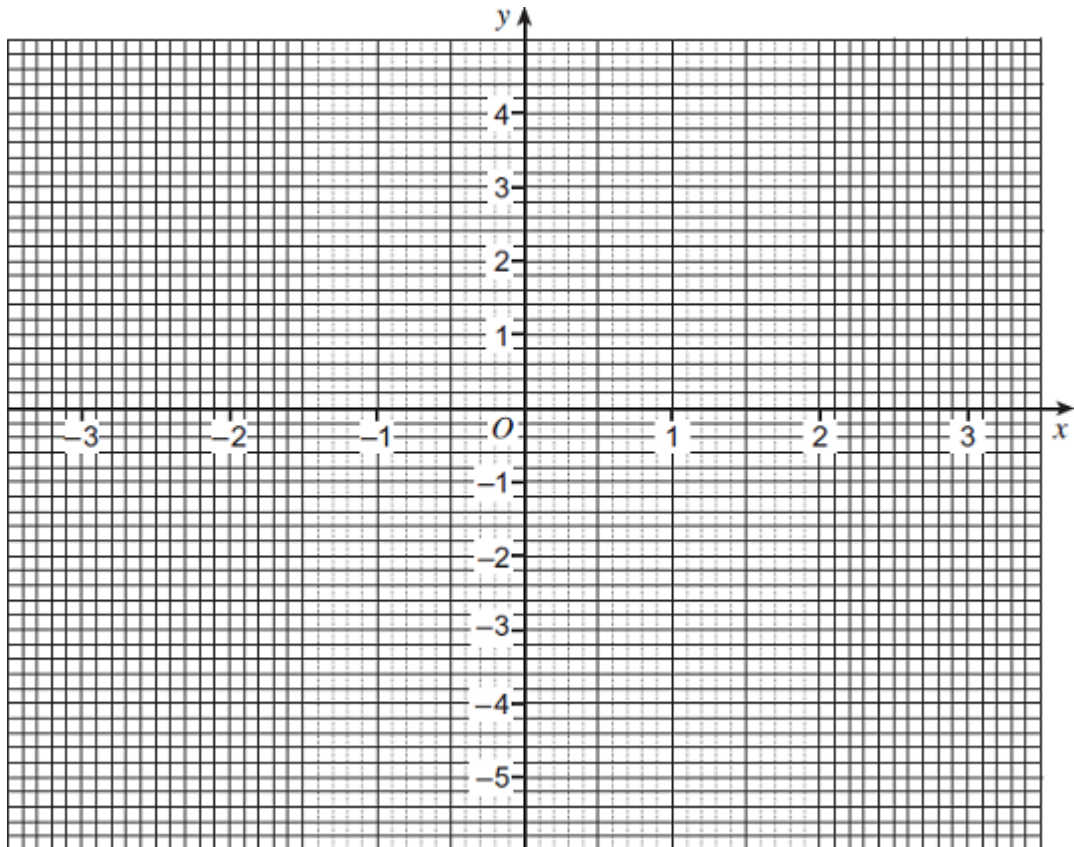
**Q8.**

- (a) Complete the table of values for  $y = x^2 - 5$

$x$	-3	-2	-1	0	1	2	3
$y$		-1	-4	-5		-1	4

(2)

- (b) Draw the graph of  $y = x^2 - 5$  for values of  $x$  from -3 to 3.



(3)

- (c) Write down the values of  $x$  when  $y = 0$

Answer \_\_\_\_\_ and \_\_\_\_\_

(2)

(Total 7 marks)

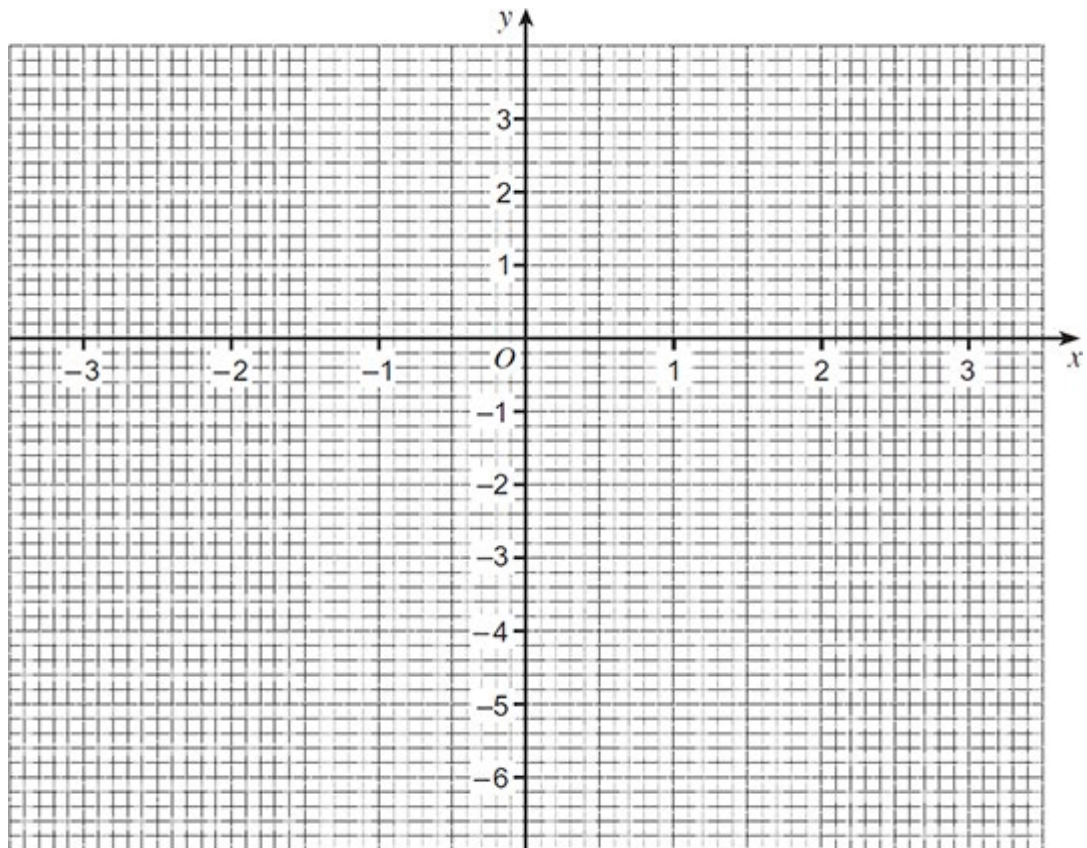
**Q9.**

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

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

(2)

(b) Draw the graph of  $y = 3 - x^2$  for values of  $x$  from -3 to 3



(2)

(c) Use the graph to work out the values of  $x$  when  $y = -1.5$

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Answer \_\_\_\_\_ and \_\_\_\_\_

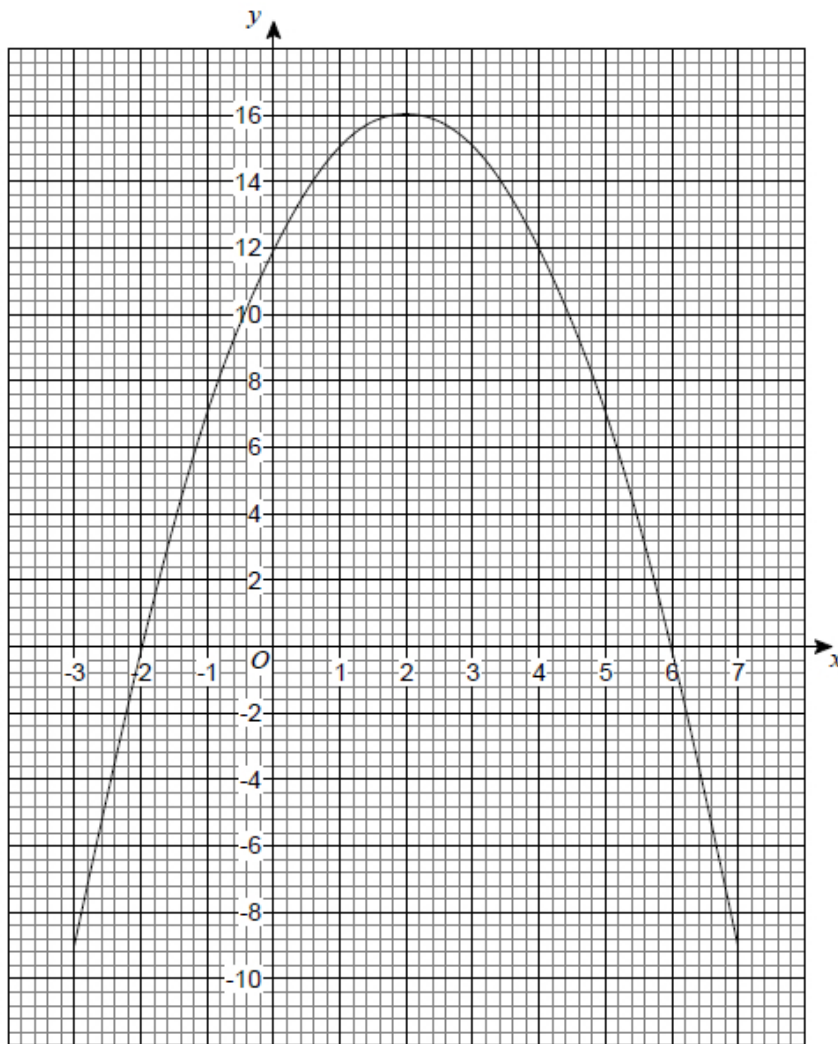
(2)

(Total 6 marks)



**Q10.**

The graph  $y = a + bx - x^2$  is shown.



(a) Circle the coordinates of the turning point of the curve.

(-2, 0)                      (0, 12)                      (2, 16)                      (6, 0)

(1)

(b) Circle the value of  $a$ .

-2                      12                      16                      6

(1)

(c) Circle the two roots of  $a + bx - x^2 = 0$

-2 and 6                      2 and -6                      2 and 6                      -2 and -6

(1)

(Total 3 marks)

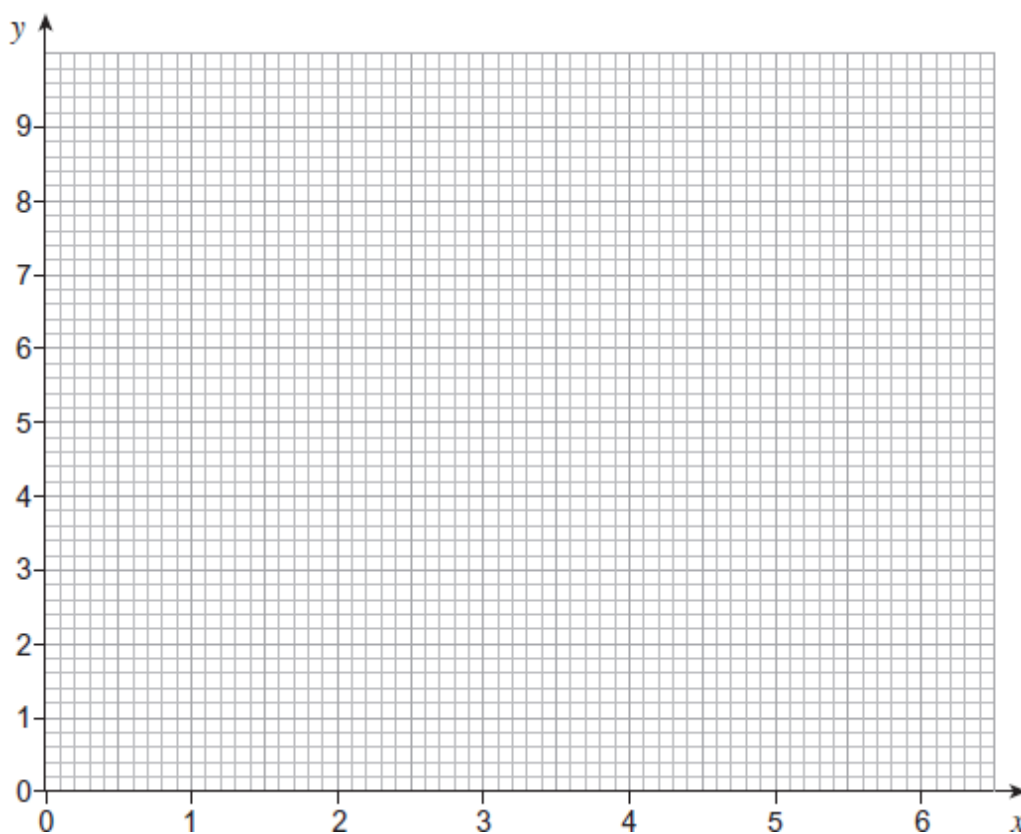
**Q11.**

- (a) Complete the table of values for  $y = x^2 - 6x + 9$

$x$	0	1	2	3	4	5	6
$y$	9	4			1		9

(2)

- (b) Draw the graph of  $y = x^2 - 6x + 9$  for values of  $x$  from 0 to 6



(2)

- (c) Write down the solution of the equation  $x^2 - 6x + 9 = 0$

$x =$  \_\_\_\_\_

(1)

(Total 5 marks)