

Name: _____

GCSE (1 – 9)

Quadratic Graphs

Instructions

- Use **black** ink or ball-point pen.
- Answer all questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out.**

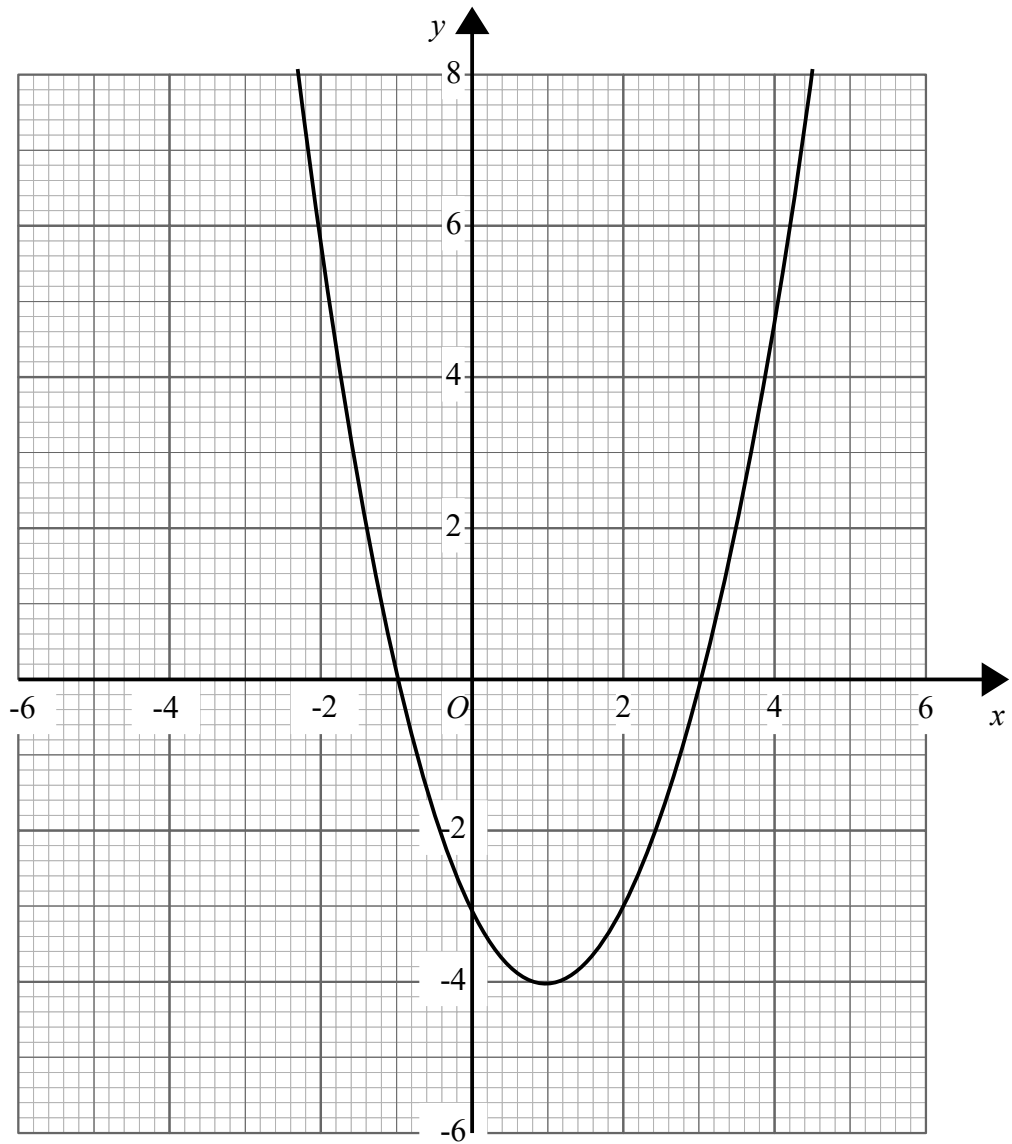
Information

- The marks for each question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end

1 Here is the graph of $y = x^2 - 2x - 3$



(a) Write down the turning point of the graph $y = x^2 - 2x - 3$

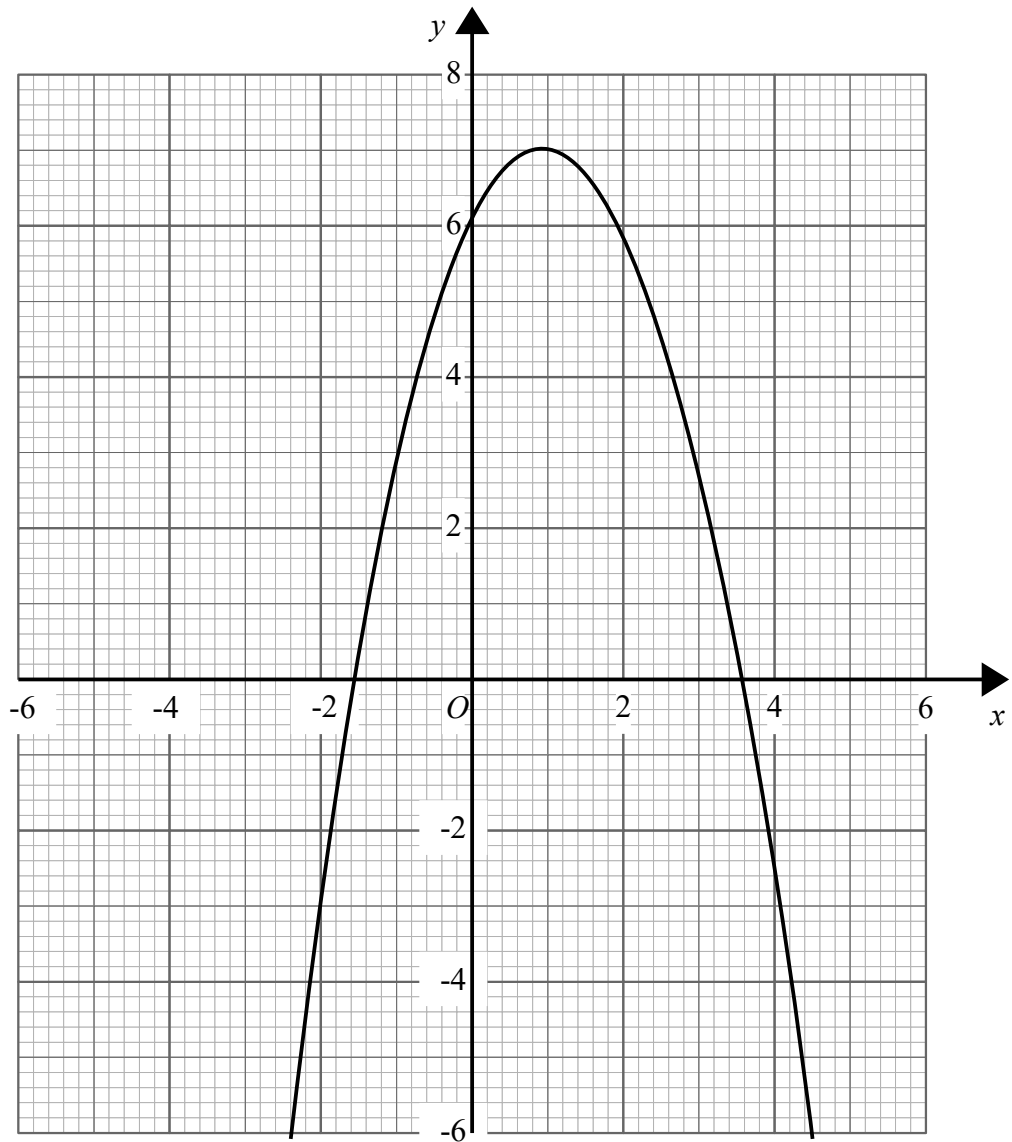
(..... ,)
(1)

(b) Use the graph to find the roots of the equation $x^2 - 2x - 3 = 0$

.....
(2)

(Total for question 1 is 3 marks)

2 Here is the graph of $y = 2x + 6 - x^2$



(a) Write down the turning point of the graph $y = 2x + 6 - x^2$

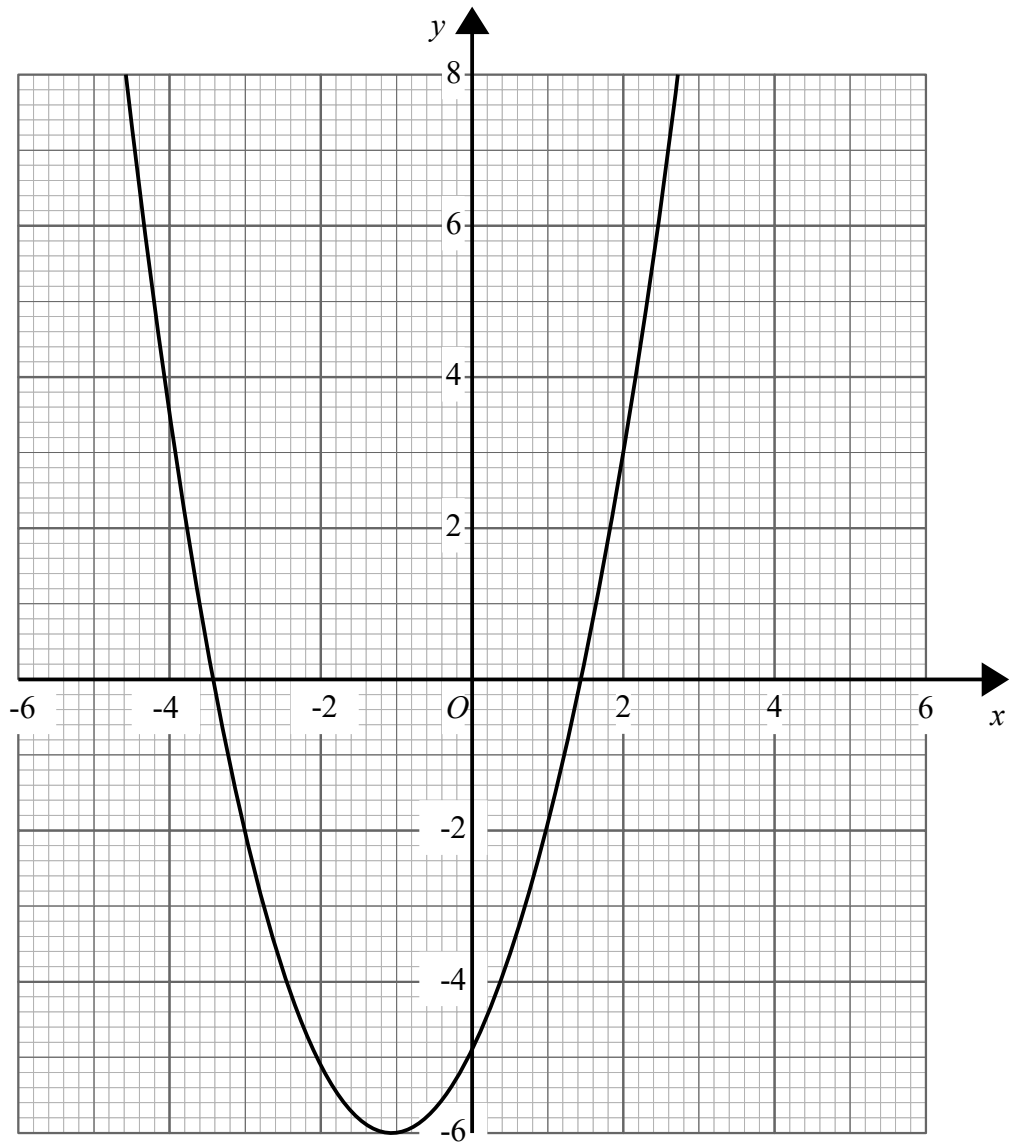
(..... ,)
(1)

(b) Use the graph to find the roots of the equation $x^2 = 2x + 6$

.....
(2)

(Total for question 2 is 3 marks)

3 Here is the graph of $y = x^2 + 2x - 5$



(a) Write down the turning point of the graph $y = x^2 + 2x - 5$

(..... ,)
(1)

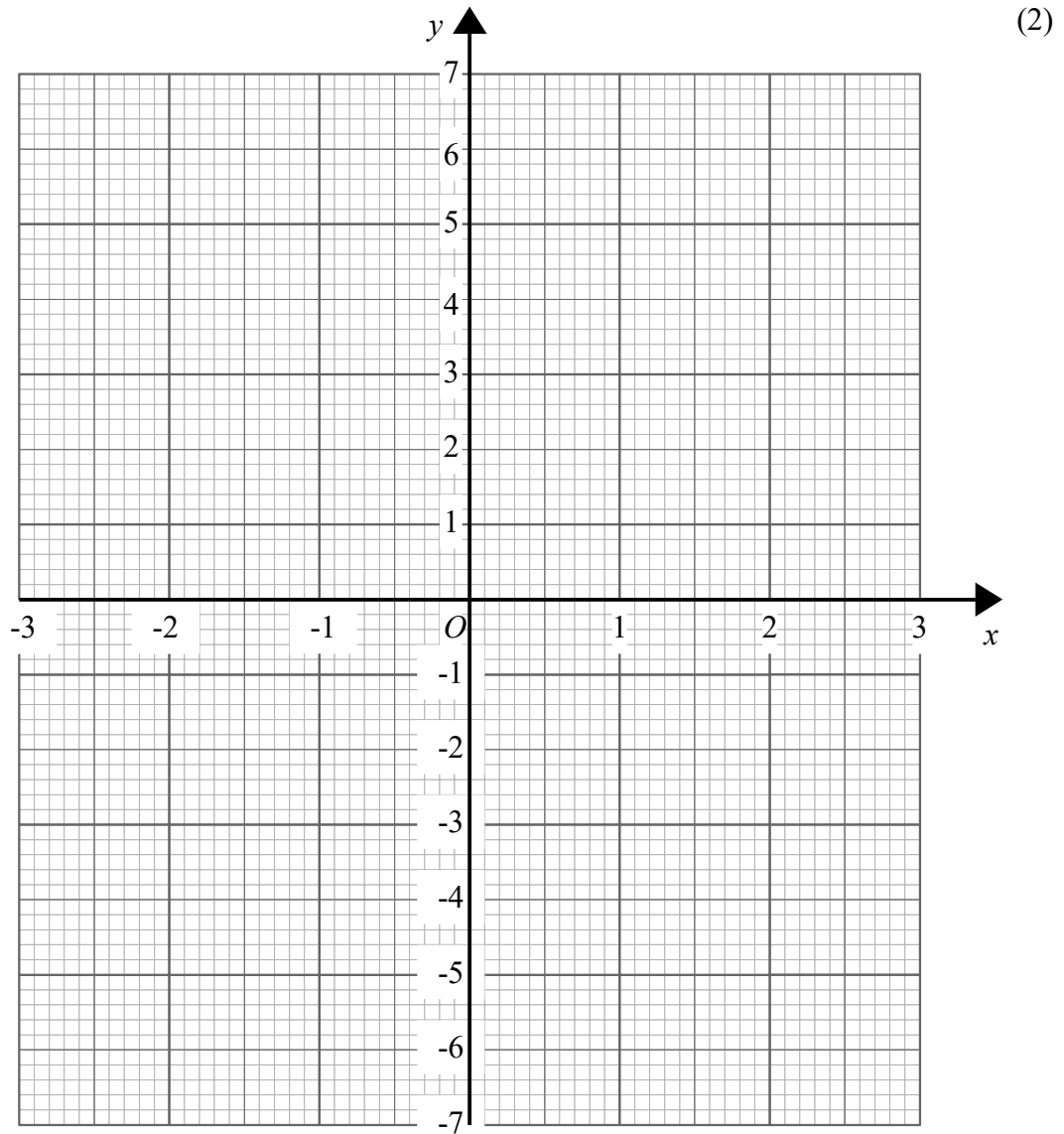
(b) Use the graph to find the roots of the equation $x^2 + 2x - 5 = 2$

.....
(2)

(Total for question 3 is 3 marks)

4 Complete the table of values for $y = x^2 + x - 6$

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



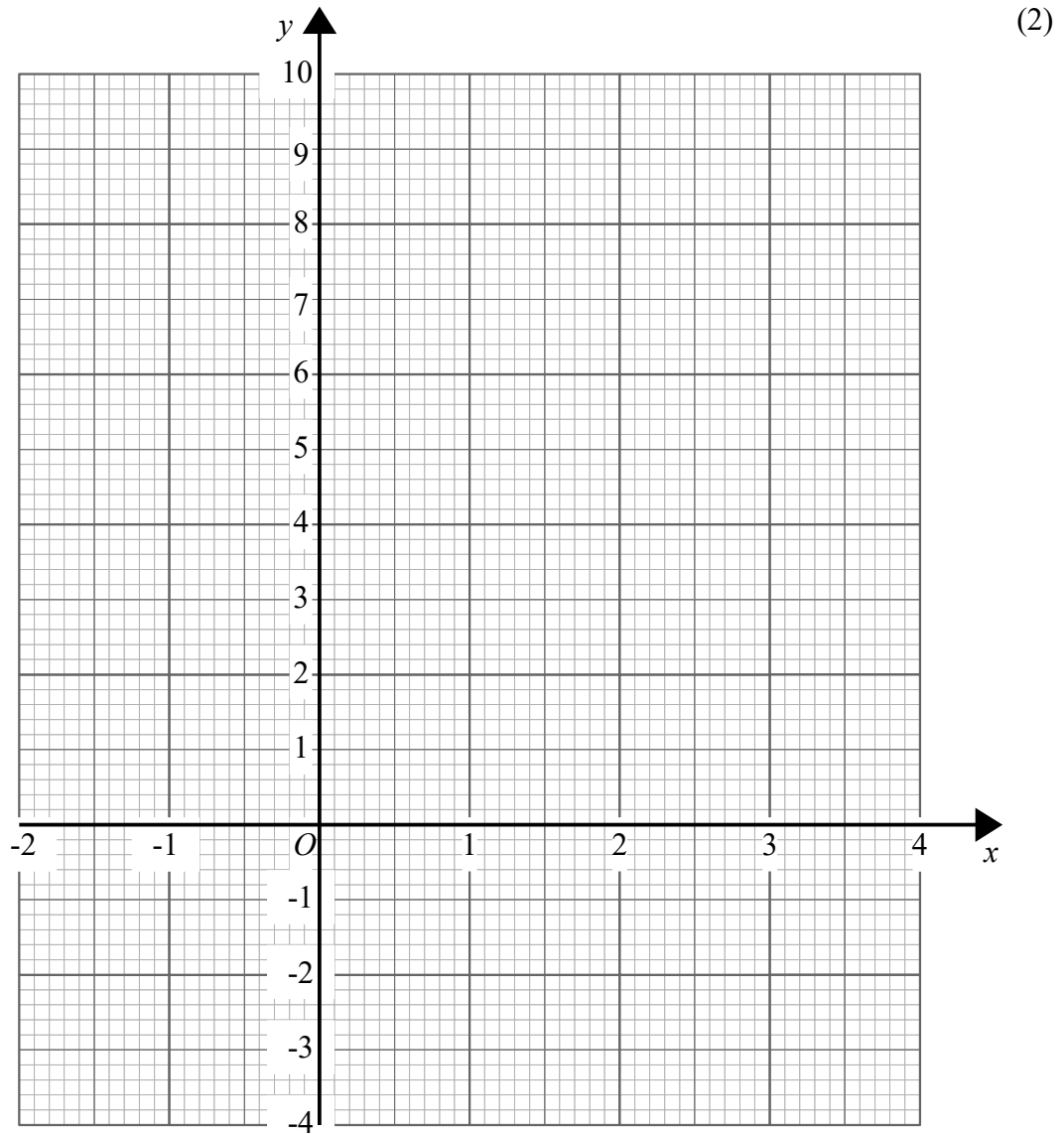
(a) On the grid draw the graph of $y = x^2 + x - 6$ for values of x from -3 to 3 (2)

(b) Use the graph to find estimates of the solutions to the equation $x^2 + x - 6 = -2$

.....
(2)
(Total for question 4 is 6 marks)

5 Complete the table of values for $y = x^2 - 3x - 1$

x	-2	-1	0	1	2	3	4
y							



(a) On the grid draw the graph of $y = x^2 - 3x - 1$ for values of x from -2 to 4 (2)

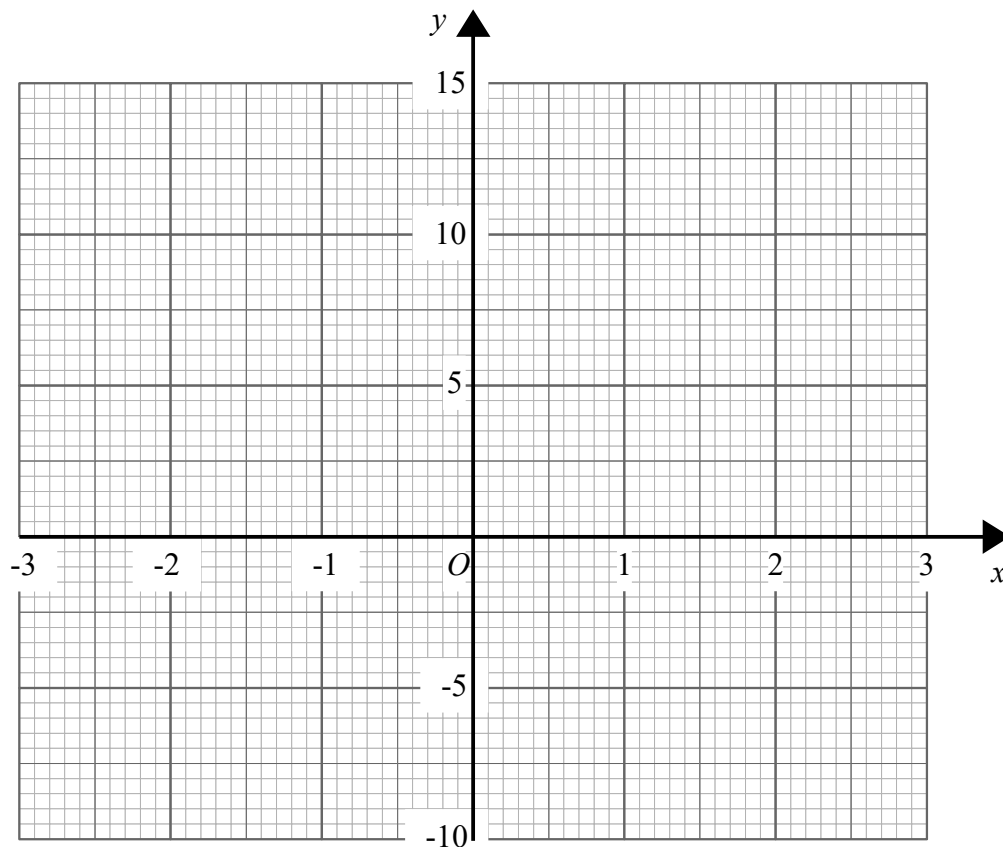
(b) Use the graph to find an estimate of the turning point of the graph $y = x^2 - 3x - 1$

.....
(2)
(Total for question 5 is 6 marks)

6 Complete the table of values for $y = x^2 - 2x - 5$

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

(2)



(a) On the grid draw the graph of $y = x^2 - 2x - 5$ for values of x from -3 to 3 (2)

(b) Use the graph to find an estimate of a solution to the equation $x^2 = 2x + 5$

.....
(1)

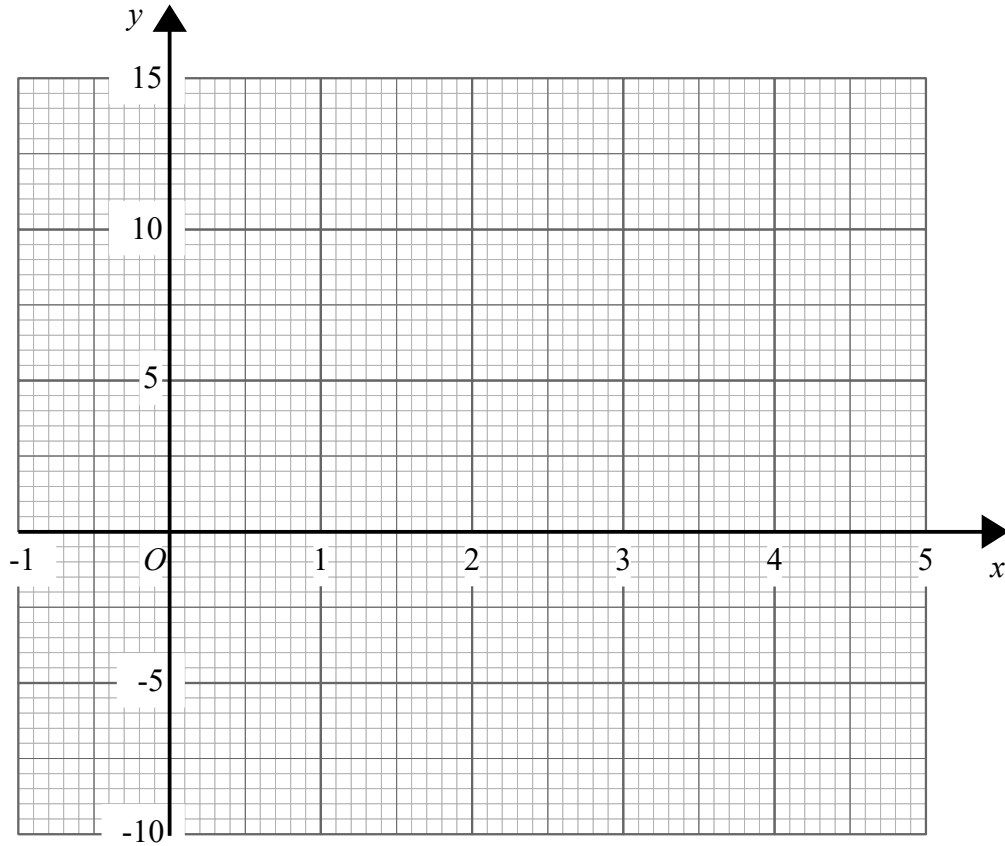
(Total for question 6 is 5 marks)

7

Complete the table of values for $y = 7x - x^2$

x	-1	0	1	2	3	4	5
y							

(2)



(a) On the grid draw the graph of $y = 7x - x^2$ for values of x from -1 to 5 (2)

(b) Use the graph to find an estimate of the turning point of the graph $y = 7x - x^2$

(c) Find the solutions to the equation $7x - x^2 = 0$

(2)

.....
 (2)
(Total for question 7 is 8 marks)