



ALGEBRAIC GRAPHS

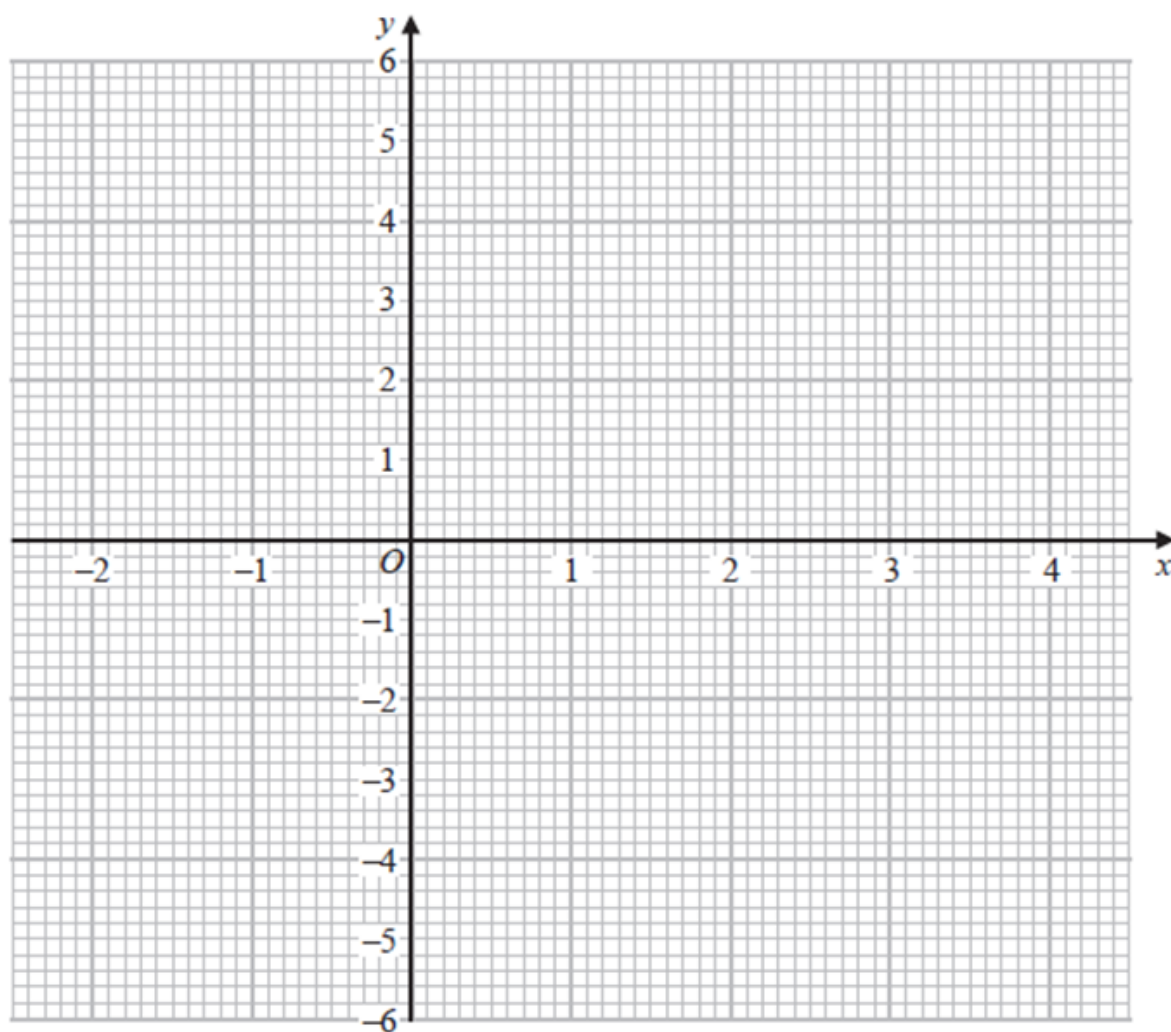
QUESTION 1

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

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

(2)

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



(2)

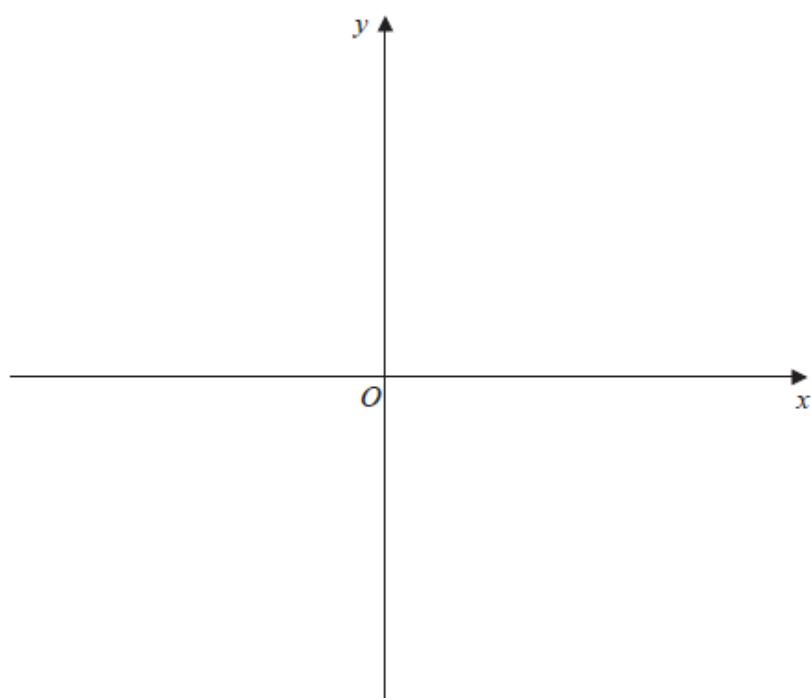
QUESTION 2

Sketch the graph of

$$y = x^2 - 8px - 9 \quad \text{where } p > 0$$

showing the coordinates of the turning point, in terms of p , and the coordinates of the intercept with the y -axis.

You must show all your working.



(5 marks)

QUESTION 3

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

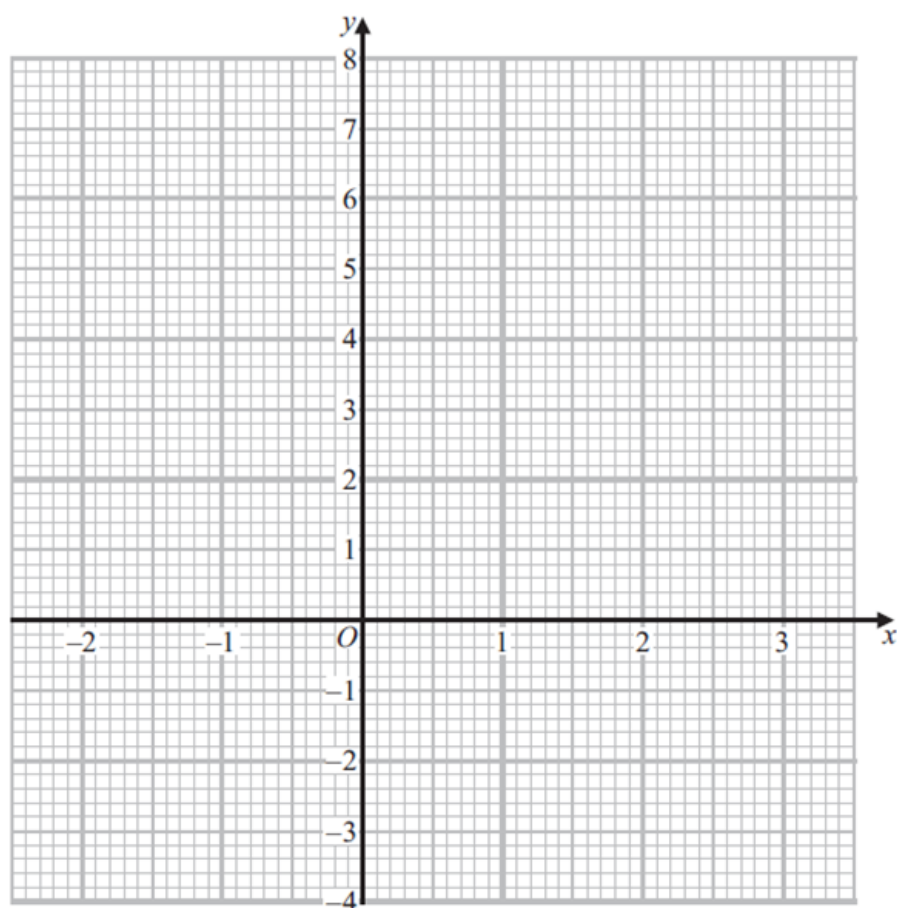


x	-2	-1	0	1	2	3
y	8		0		0	



(2)

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



(2)

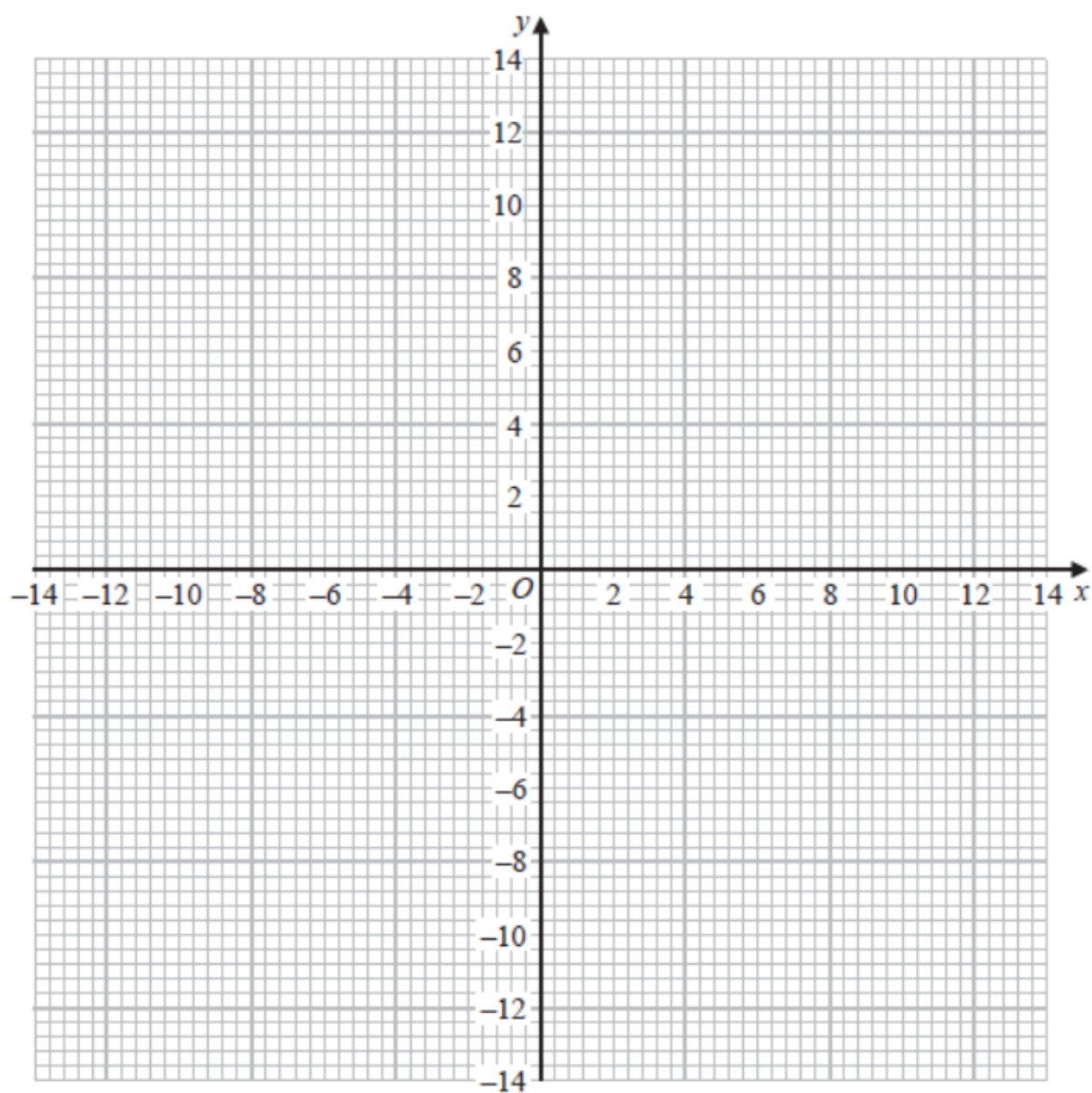
- (c) Use your graph to find estimates for the solutions of the equation
- $x^2 - 2x = 2$

.....

(2)

Question 4

- (a) On the grid, draw the graph of $x^2 + y^2 = 121$



(2)

- (b) Use your graph to find estimates for the solutions of the simultaneous equations

$$x^2 + y^2 = 121$$

$$3y = 2x$$

(3)

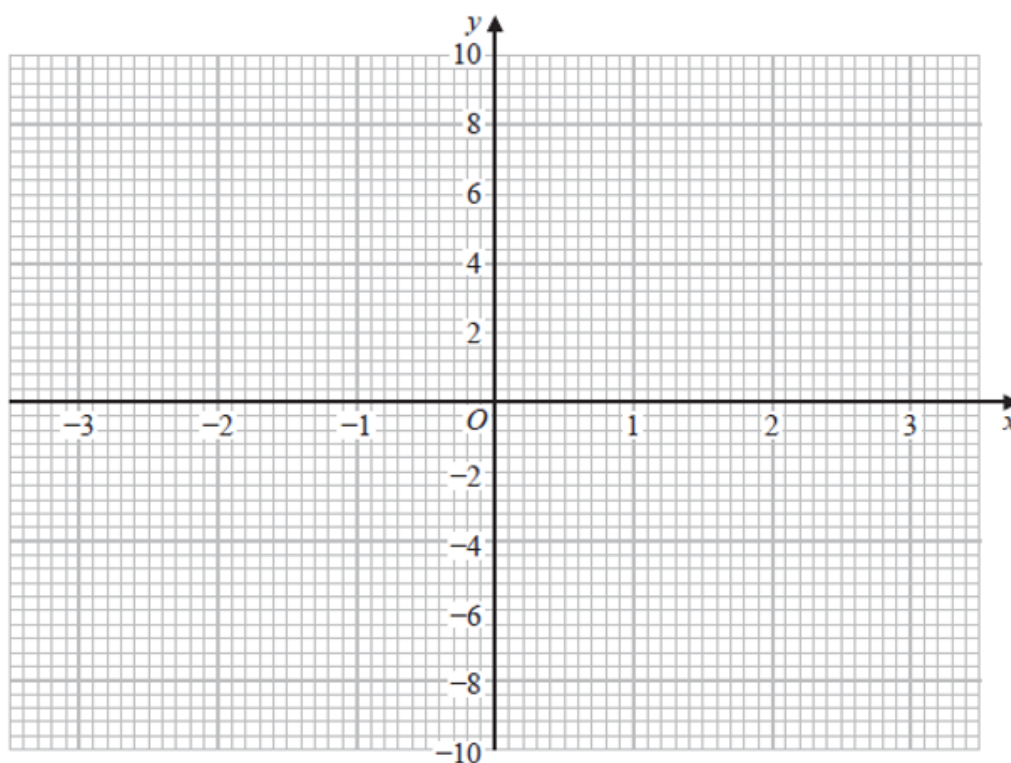
Question 5

(a) Complete the table of values for $y = 7x - x^3$

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

(2)

(b) On the grid, draw the graph of $y = 7x - x^3$ for values of x from -3 to 3



(2)

Question 6

The equation of a curve is $y = 9x^2 - 54x$

The curve has one turning point.

By completing the square, show that the coordinates of the turning point are $(3, -81)$

You must show all your working.

(3)

Question 7

Find the coordinates of the turning point on the curve with equation $y = 50 + 20x - 2x^2$
You must show all your working.

(..... ,)

(4 marks)

Question 8

Sketch the graph of

$$y = 3x^2 - 12x - 5$$

showing the coordinates of the turning point and the exact coordinates of any intercepts
with the coordinate axes.

(5)

