



Name: _____

Date: _____

Score: _____ / 49

1 The curve $y = x^2 - 6x + 8$ crosses the x -axis at $x = 2$ and at $x = 4$.

- Write down the solutions of $x^2 - 6x + 8 = 0$
- Write down the x -coordinate of the turning point of the curve.



(2 marks)

Answer _____

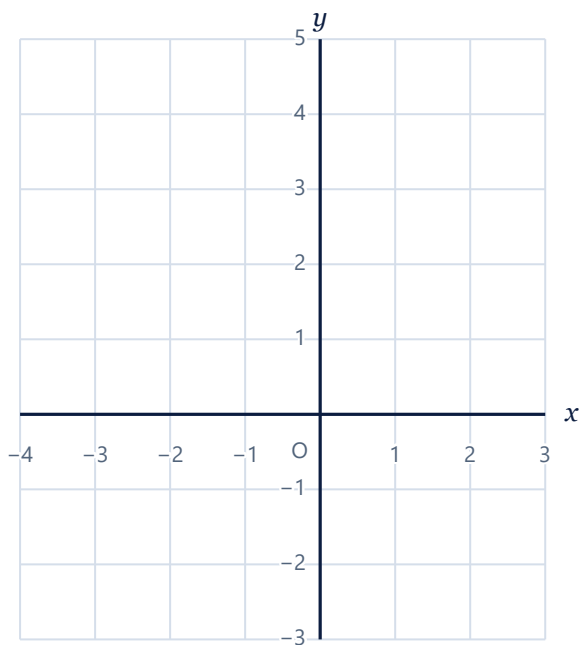
2

Here is a table of values for $y = x^2 + x - 2$

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

a. Complete the table.

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



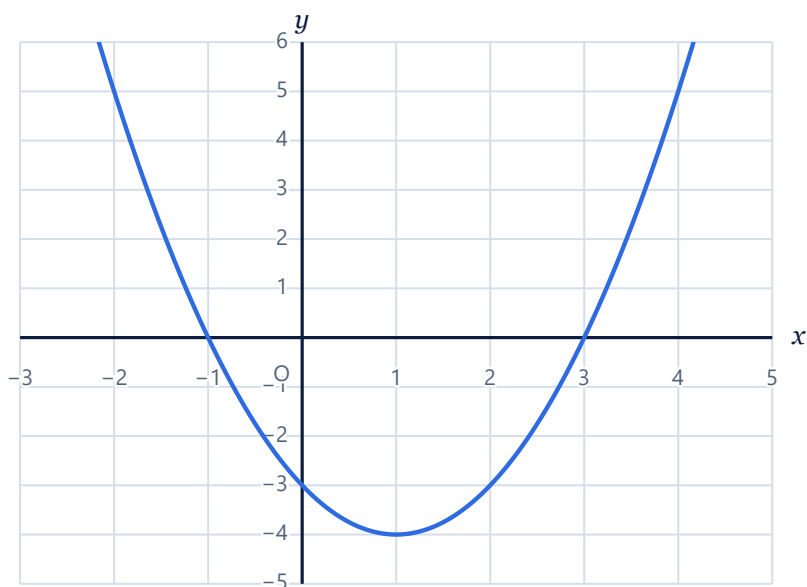
(4 marks)

Answer _____

3

The diagram shows the graph of $y = x^2 - 2x - 3$

- Write down the coordinates of the point where the graph crosses the y -axis.
- Write down the solutions of $x^2 - 2x - 3 = 0$
- Write down the coordinates of the turning point of the graph.



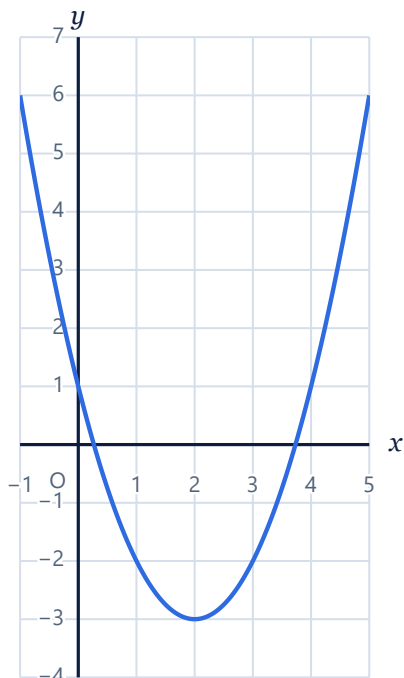
(3 marks)

Answer _____

4

The graph of $y = x^2 - 4x + 1$ is drawn on the grid.

- Write down the equation of the line of symmetry of the graph.
- Write down the coordinates of the turning point.
- Use the graph to estimate the solutions of $x^2 - 4x + 1 = 0$
- Use the graph to estimate the solutions of $x^2 - 4x + 1 = 2$



(4 marks)

Answer _____

5

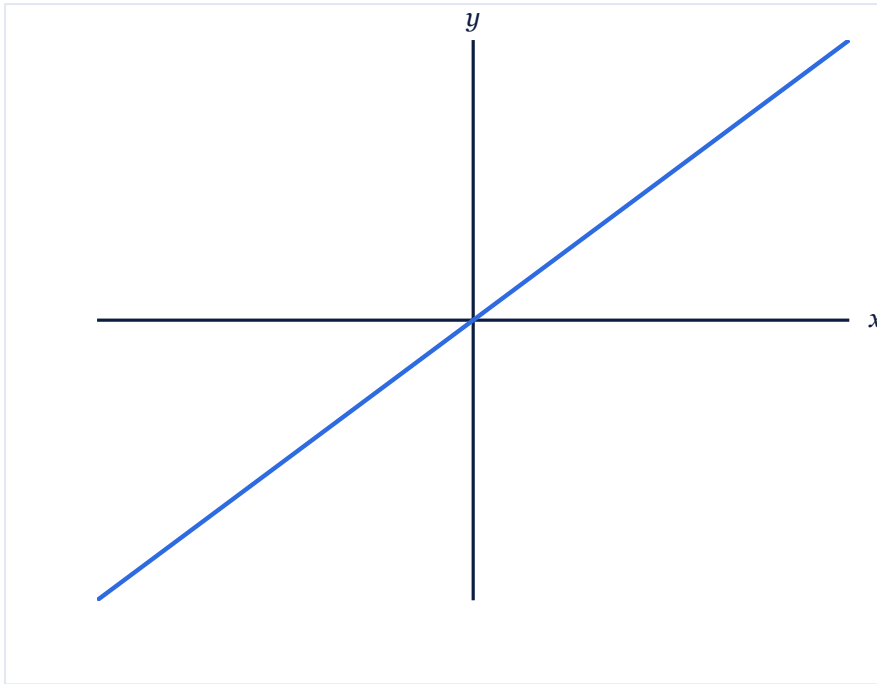
The diagram shows five sketch graphs, labelled **A**, **B**, **C**, **D** and **E**.

Match each equation below to the letter of its graph.

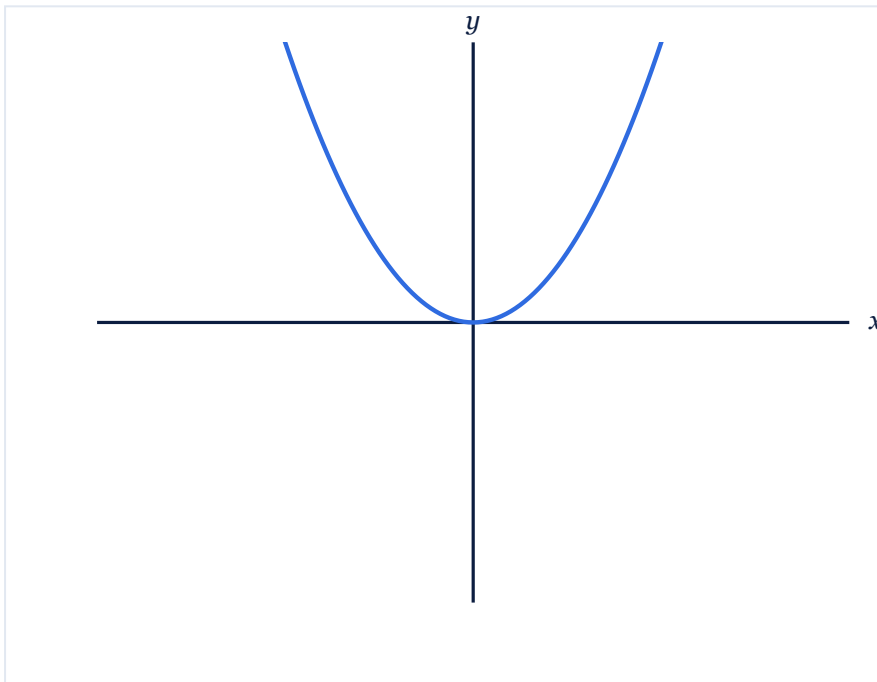
a. $y = -x^2$

b. $y = x^3$

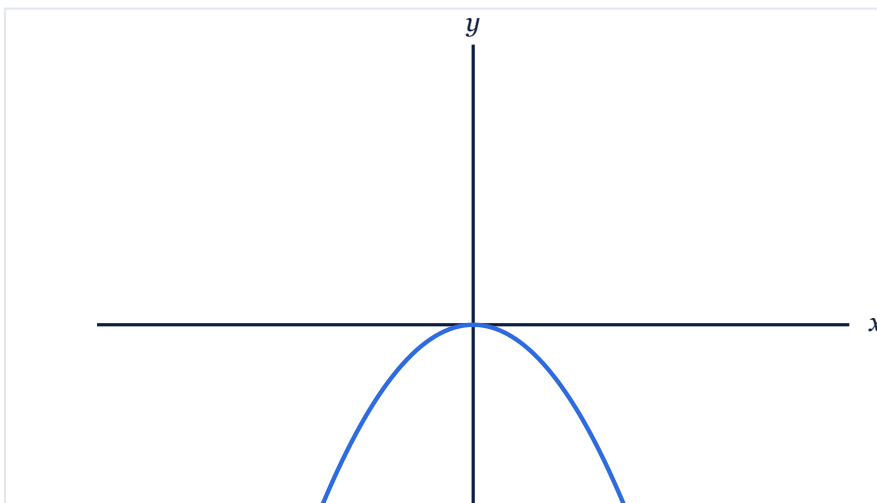
c. $y = \frac{5}{x}$



A

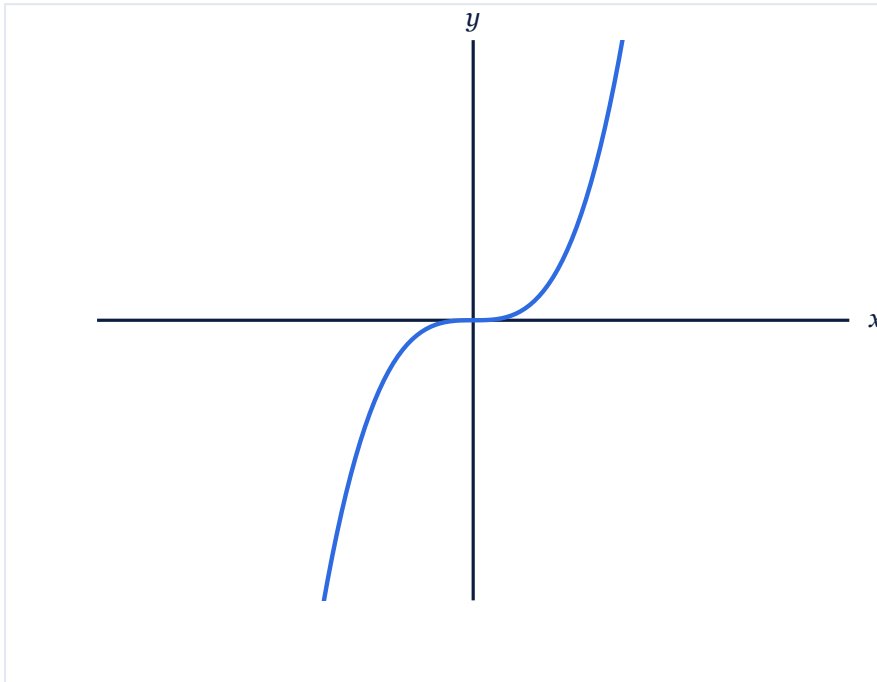


B

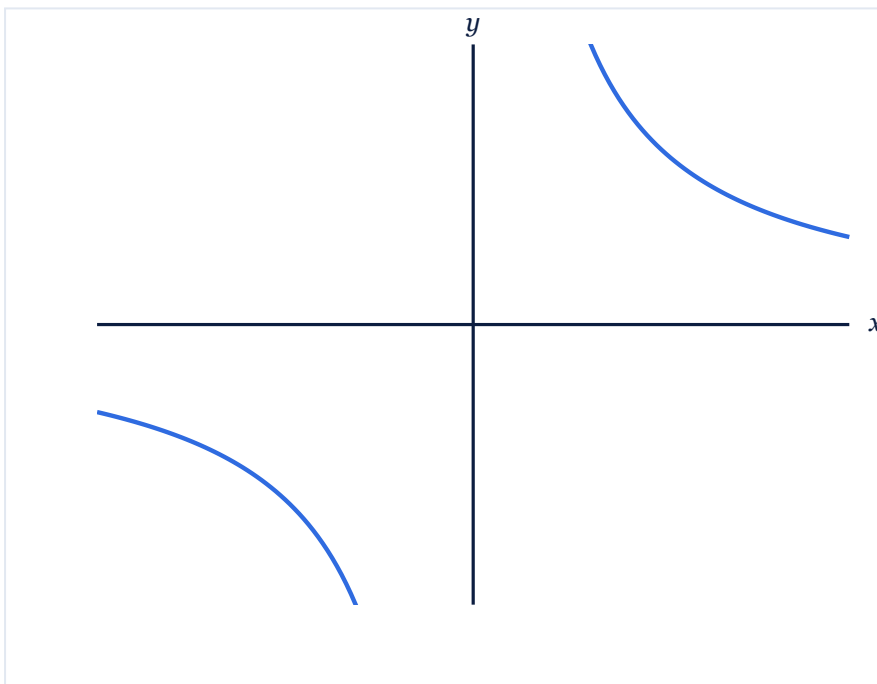




C



D



E

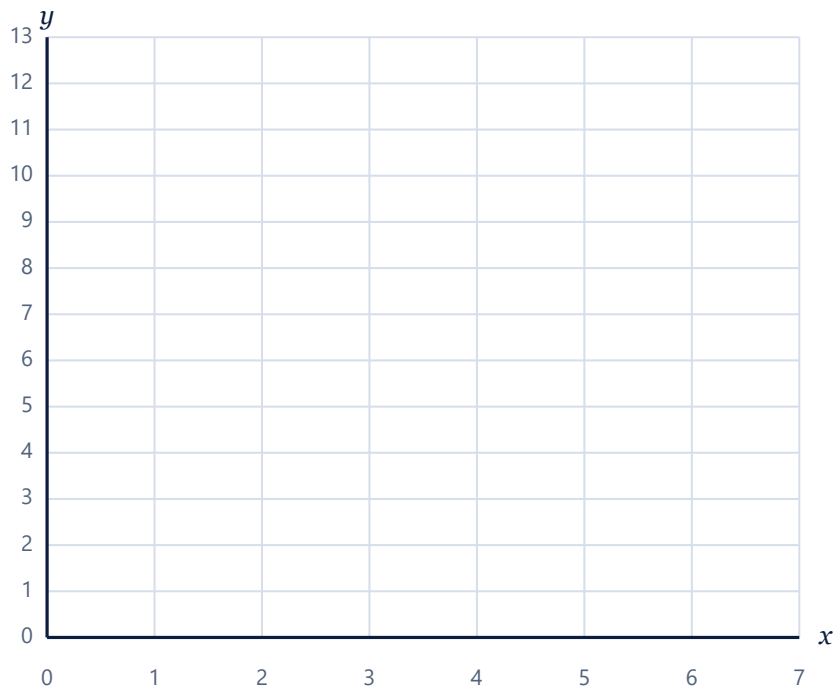
(3 marks)

6

Here is a table of values for $y = \frac{6}{x}$

x	0.5	1	2	3	4	6
y		6		2		

- Complete the table.
- On the grid, draw the graph of $y = \frac{6}{x}$ for values of x from 0.5 to 6
- Explain why the graph never meets the y -axis.



(4 marks)

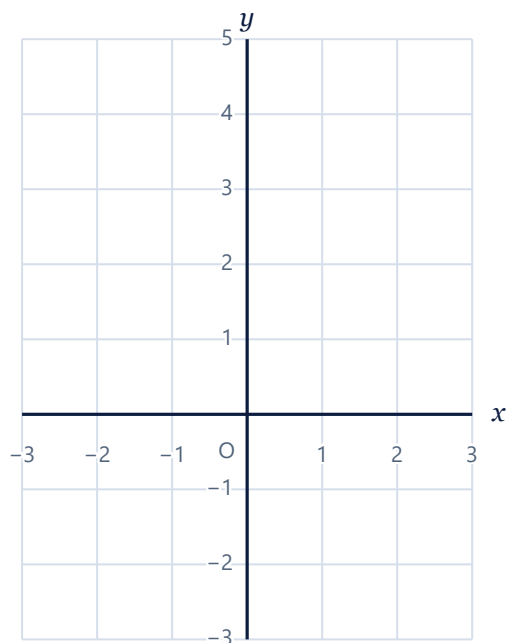
7

Here is a table of values for $y = x^3 - 4x + 1$

x	-2	-1	0	1	2
y	1		1		

a. Complete the table.

b. On the grid, draw the graph of $y = x^3 - 4x + 1$ for values of x from -2 to 2



(4 marks)

Answer _____

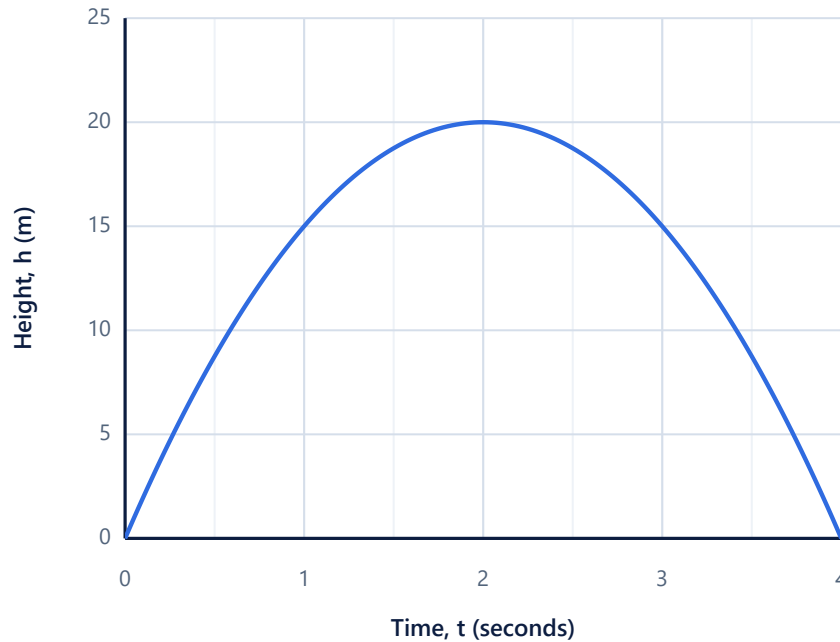
8

Kwame throws a ball straight up into the air. Its height, h metres, after t seconds is given by

$$h = 20t - 5t^2$$

The graph of h against t is drawn on the grid.

- Write down the greatest height of the ball, and the time when it reaches this height.
- Use the graph to find the two times when the ball is 15 m high.
- How long is the ball in the air?



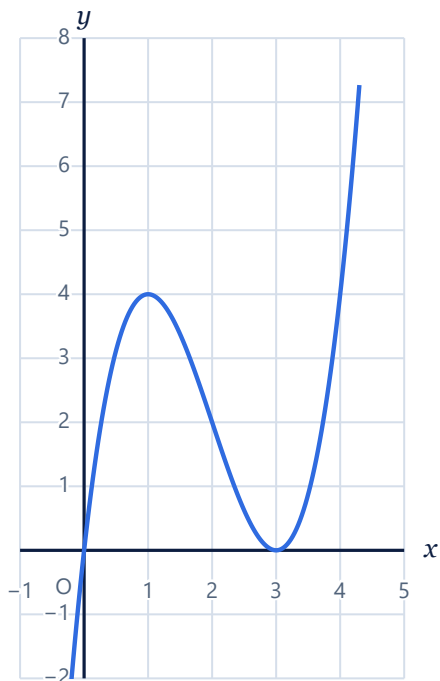
(4 marks)

Answer _____

9 The graph of $y = x^3 - 6x^2 + 9x$ is drawn on the grid.

a. Use the graph to write down the solutions of $x^3 - 6x^2 + 9x = 0$

b. Use the graph to estimate the three solutions of $x^3 - 6x^2 + 9x = 2$

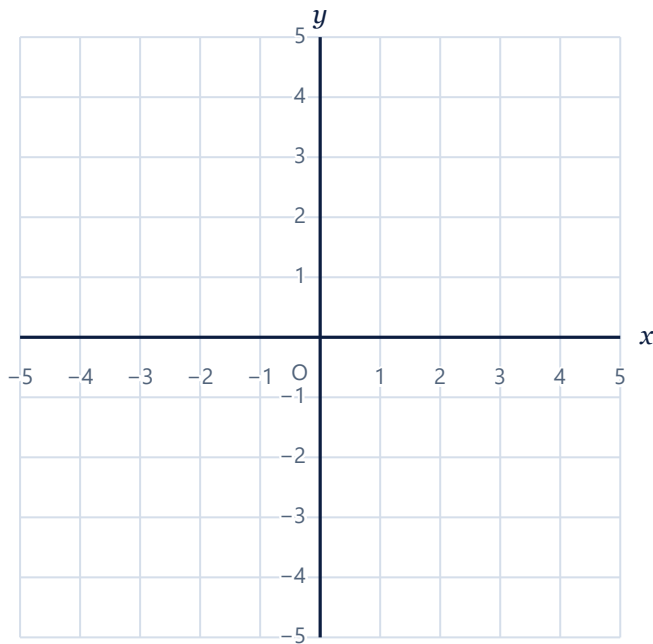


(4 marks)

Answer _____

10

- a. On the grid, draw the graph of $x^2 + y^2 = 16$
- b. Write down the radius of the circle $x^2 + y^2 = 49$
- c. Does the point $(2, 3)$ lie inside, on or outside the circle $x^2 + y^2 = 16$? Show how you decide.

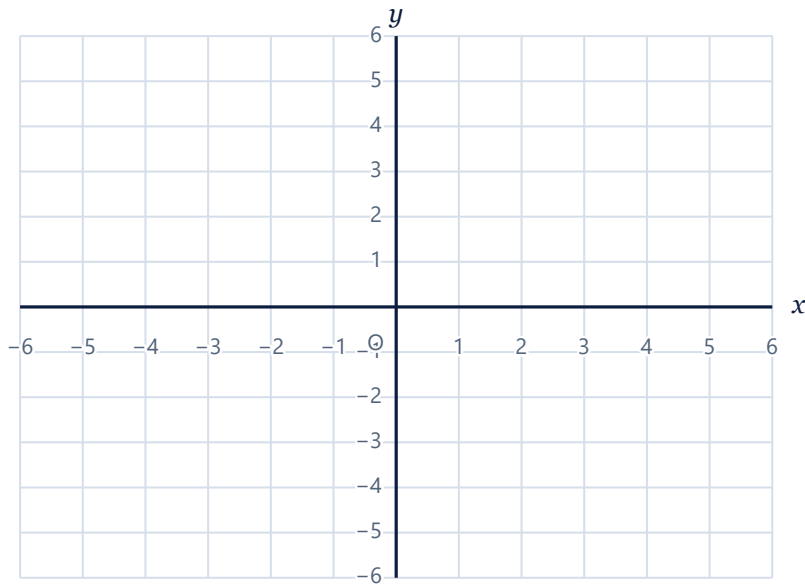


(4 marks)

Answer

11

- a. On the axes, sketch the graph of $y = \frac{6}{x}$ for negative and positive values of x
- b. Write down the coordinates of any points where the graph crosses the coordinate axes.



(4 marks)

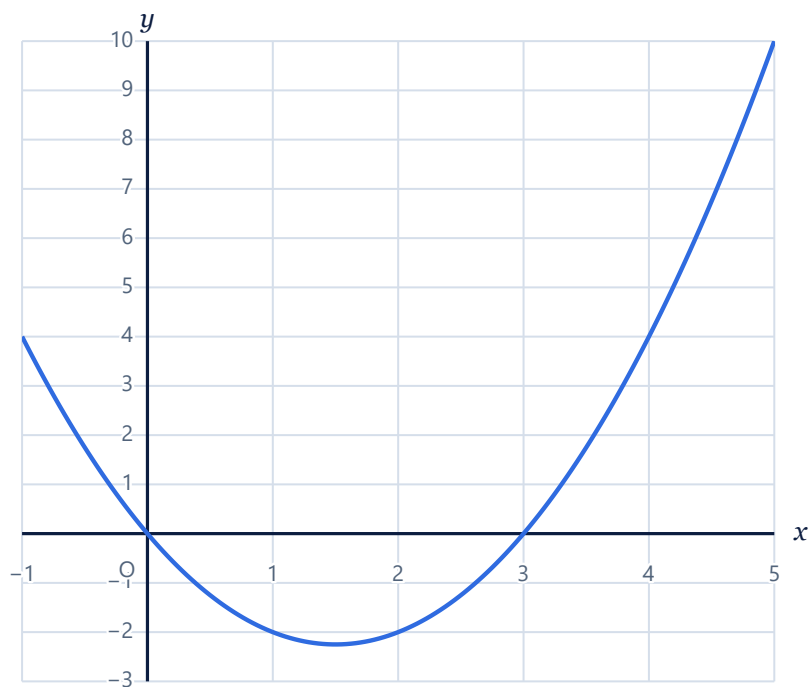
Answer _____

EXTENSION QUESTIONS

12 The graph of $y = x^2 - 3x$ is drawn on the grid.

a. Use the graph to solve $x^2 - 3x = 0$

b. By drawing a suitable straight line on the grid, estimate the solutions of $x^2 - 4x - 1 = 0$

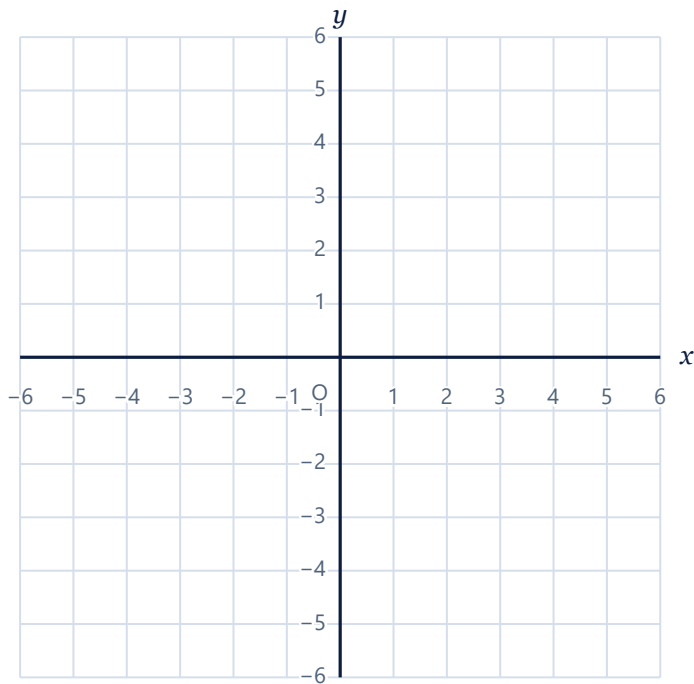


(5 marks)

Answer _____

13

- a. On the grid, draw the graph of $x^2 + y^2 = 25$
- b. On the same grid, draw the line $y = x + 1$
- c. Write down the coordinates of the points where the line meets the circle.



(4 marks)

Answer

End of questions | Total 49 marks