Topic Test 1 (20 minutes)

Quadratic graphs - Foundation

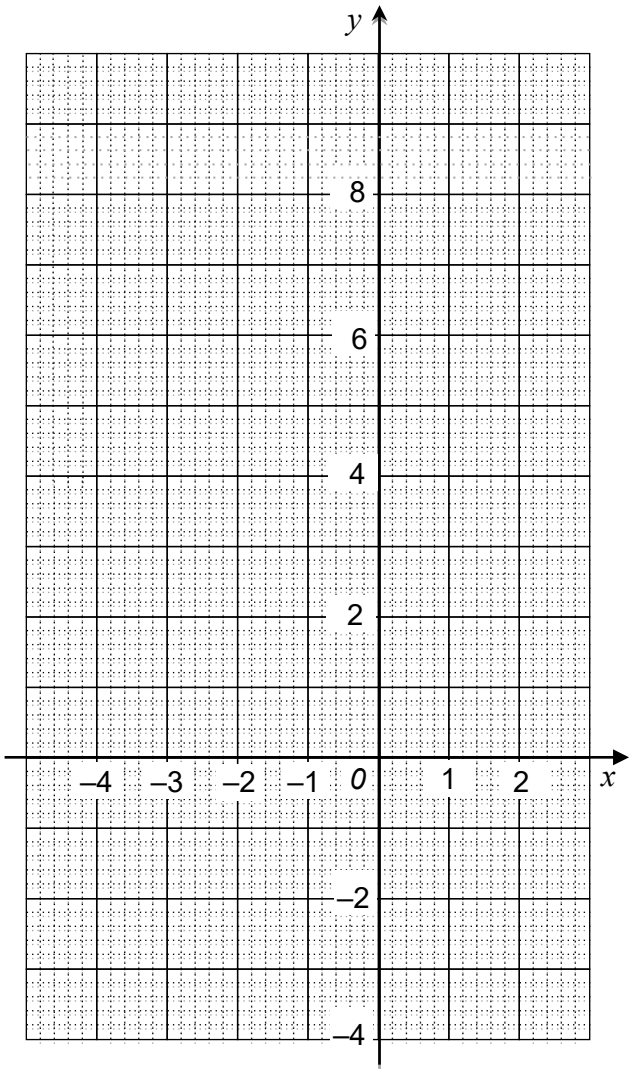
1 (a) Complete this table of values for $y = x^2 + 3x - 1$ for values of x from –4 to 2

[1 mark]

x	–4	–3	–2	–1	0	1	2
y	3	–1		–3			9

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

[2 marks]



1(c) Use the graph to estimate the value of y when $x = -0.5$

[1 mark]

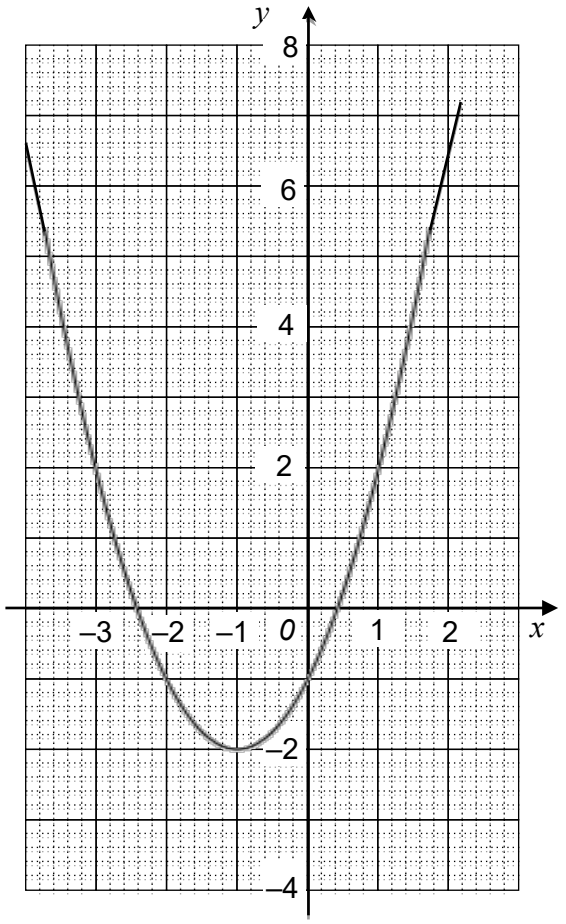
Answer _____

1(d) Use the graph to estimate the solutions to $x^2 + 3x - 1 = 0$

[2 marks]

Answer _____

2 Here is the graph of $y = x^2 + 2x - 1$ for values of x from –3 to 2



From the graph write down the coordinates of the following

[4 marks]

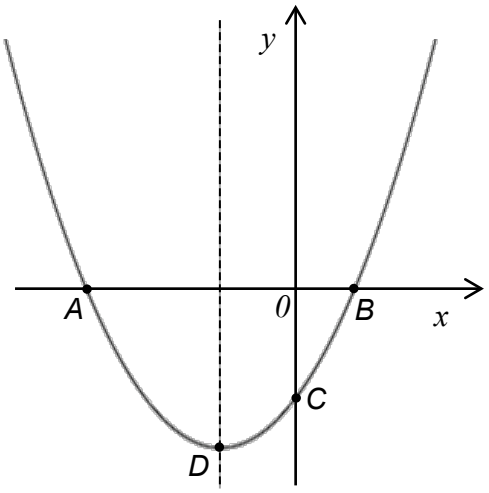
The y-intercept (_____ , _____)

The turning point (_____ , _____)

The negative root of $x^2 + 2x - 1 = 0$ (_____ , _____)

The positive root of $x^2 + 2x - 1 = 0$ (_____ , _____)

3 Here is a sketch of the graph $y = (x - 1)(x + 4)$



3 (a) Write down the coordinates of the point *A*.

[1 mark]

Answer (_____ , _____)

3 (b) Write down the coordinates of the point *B*.

[1 mark]

Answer (_____ , _____)

3 (c) Write down the coordinates of the point *C*.

[1 mark]

Answer (_____ , _____)

3 (d) Write down the equation of the line of symmetry of the graph.

[1 mark]

Answer _____

3 (e) Work out the coordinates of the point *D*.

[1 mark]

Answer _____

4 (a) Solve the quadratic equation $x^2 + 6x + 9 = 0$

[2 marks]

Answer _____

4 (b) Sketch the graph of $y = x^2 + 6x + 9$ on the axes.

Clearly mark the values of the points where the graph crosses the axes.

[3 marks]