

Drawing Quadratic Graphs

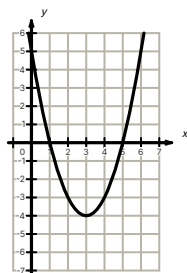
discia.org · 10 questions · 28 marks

NAME _____

DATE _____

- 1 The graph of $y = x^2 - 6x + 5$ is drawn on the grid.

 EITHER PAPER 3 MARKS



- (a) Write down the two values of x where the curve crosses the x -axis.
- (b) Write down the coordinates of the point where the curve crosses the y -axis.

- 2 The table shows some values of $y = x^2 + 2x$

 EITHER PAPER 3 MARKS

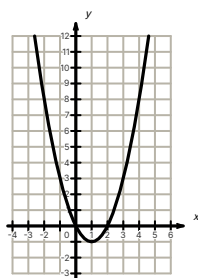
x	-4	-3	-2	-1	0	1	2
y		3	0	-1	0		8

Two of the y values are missing.

- (a) Work out the value of y when $x = -4$.
- (b) Work out the value of y when $x = 1$.
- (c) Write down the coordinates of the lowest point shown in the table.

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

EITHER PAPER 2 MARKS

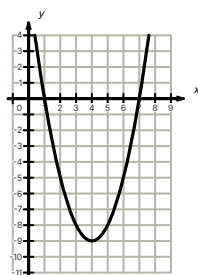


(a) Write down the coordinates of the turning point of the curve.

(b) Write down the equation of the line of symmetry of the curve.

4 The graph of $y = x^2 - 8x + 7$ is drawn on the grid.

EITHER PAPER 3 MARKS



(a) Use the graph to write down the value of y when $x = 3$.

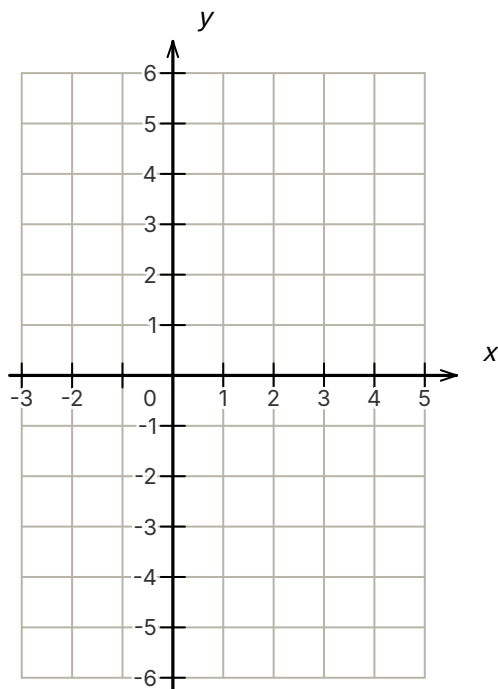
(b) Use the graph to write down the two values of x when $y = -5$.

- 5 Here is a table of values for $y = x^2 - 2x - 3$

EITHER PAPER 2 MARKS

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

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



- 6 A student has filled in a table of values for $y = x^2 - 6x$

EITHER PAPER 2 MARKS

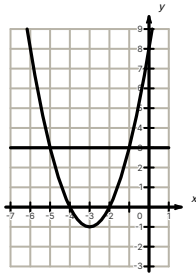
x	0	1	2	3	4	5	6
y	0	-4	-8	-9	-8	-5	0

One of the y values is wrong.

- (a) Write down the value of x for the entry that is wrong.
(b) State the correct value of y for that entry.

- 7 The graph of $y = x^2 + 6x + 8$ and the line $y = 3$ are both drawn on the grid.

EITHER PAPER 2 MARKS

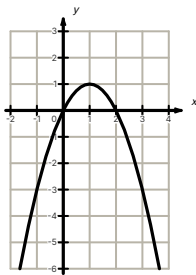


Use the graphs to solve $x^2 + 6x + 8 = 3$

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

EITHER PAPER 3 MARKS

Because of the minus sign in front of the x^2 , this parabola opens downwards.



- (a) Write down the coordinates of the highest point of the curve.
(b) Write down the two values of x where the curve crosses the x -axis.

- 9 A curve has equation $y = (x + 3)(x - 5)$

EITHER PAPER 5 MARKS

It is a parabola, and it opens upwards.

- (a) Write down the two values of x where the curve crosses the x -axis.
(b) Write down the equation of the line of symmetry of the curve.
(c) Work out the minimum value of y .

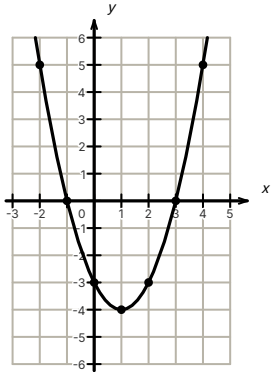
10 Here is a table of values for $y = 2x^2 - 10x - 1$

 EITHER PAPER 3 MARKS

x	-1	0	1	2	3	4
y	11	-1	-9	-13	-13	-9

The graph of $y = 2x^2 - 10x - 1$ is a parabola that opens upwards.

- (a) Write down the x -coordinate of the turning point of the graph.
- (b) Find the minimum value of y .

1	(a) $x = 1$ and $x = 5$ (b) $(0, 5)$	2	(a) 8 (b) 3 (c) $(-1, -1)$
3	(a) $(1, -1)$ (b) $x = 1$	4	(a) -8 (b) $x = 2$ and $x = 6$
5	A smooth curve through the seven points of the table, with its lowest point at $(1, -4)$ 	6	(a) 1 (b) -5
7	$x = -5$ and $x = -1$	8	(a) $(1, 1)$ (b) $x = 0$ and $x = 2$
9	(a) $x = -3$ and $x = 5$ (b) $x = 1$ (c) -16	10	(a) $\frac{5}{2}$ (b) $-\frac{27}{2}$