

Plotting Quadratic Graphs

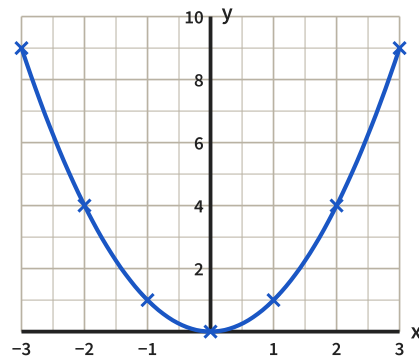
ANSWERS

1

Complete the table for $y = x^2$ and draw the graph.

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

Lowest point $(0, 0)$

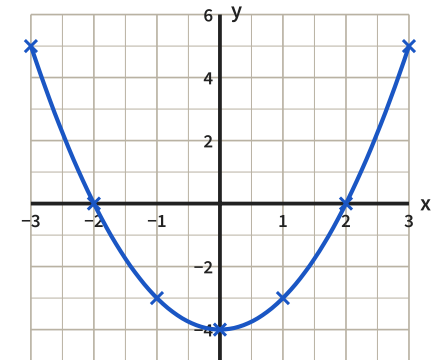


2

Complete the table for $y = x^2 - 4$ and draw the graph.

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

Lowest point $(0, -4)$

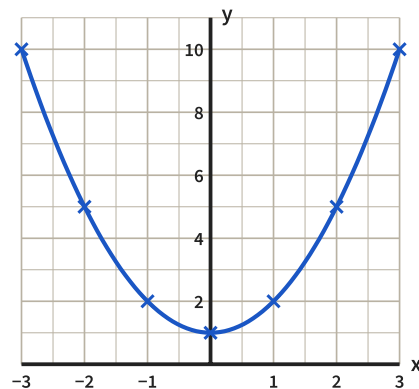


3

Complete the table for $y = x^2 + 1$ and draw the graph.

x	-3	-2	-1	0	1	2	3
y	10	5	2	1	2	5	10

Lowest point $(0, 1)$

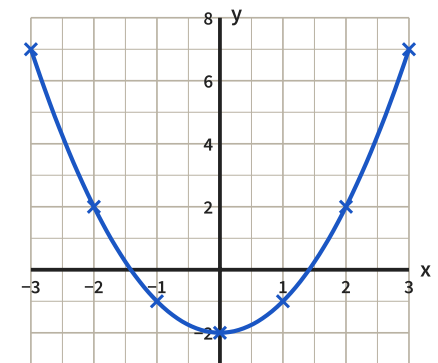


4

Complete the table for $y = x^2 - 2$ and draw the graph.

x	-3	-2	-1	0	1	2	3
y	7	2	-1	-2	-1	2	7

Lowest point $(0, -2)$



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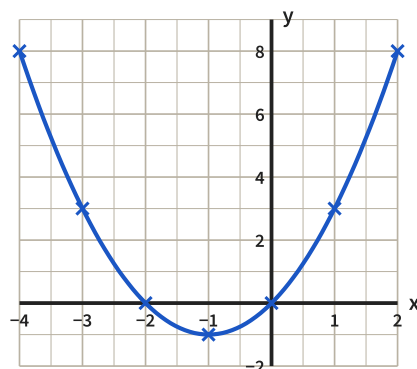
ANSWERS

5

Complete the table for $y = x^2 + 2x$ and draw the graph.

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

Lowest point $(-1, -1)$

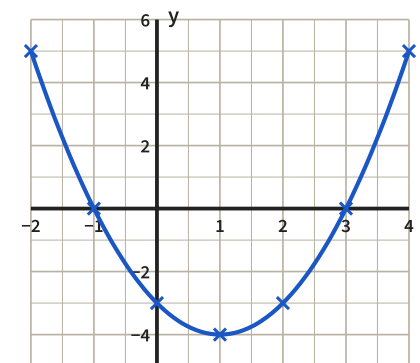


6

Complete the table for $y = x^2 - 2x - 3$ and draw the graph.

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

Lowest point $(1, -4)$

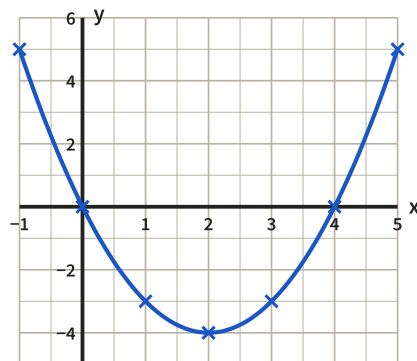


7

Complete the table for $y = x^2 - 4x$ and draw the graph.

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

Lowest point $(2, -4)$

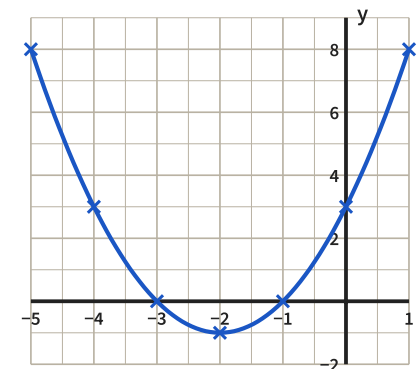


8

Complete the table for $y = x^2 + 4x + 3$ and draw the graph.

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

Lowest point $(-2, -1)$



Plotting Quadratic Graphs *further practice*

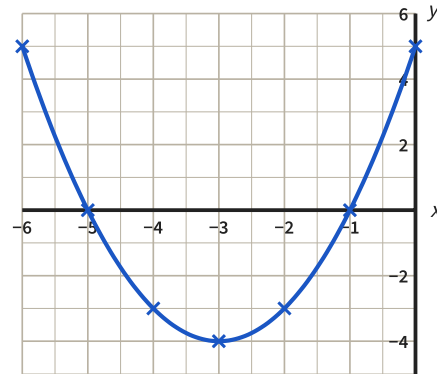
ANSWERS

9

Complete the table for $y = x^2 + 6x + 5$ and draw the graph.

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

Lowest point $(-3, -4)$



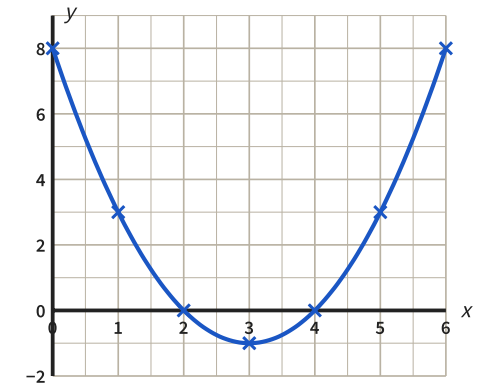
10

Complete the table for $y = x^2 - 6x + 8$ and draw the graph. Where does the graph cross the x axis?

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

Lowest point $(3, -1)$

Crosses at $x = 2$ and 4

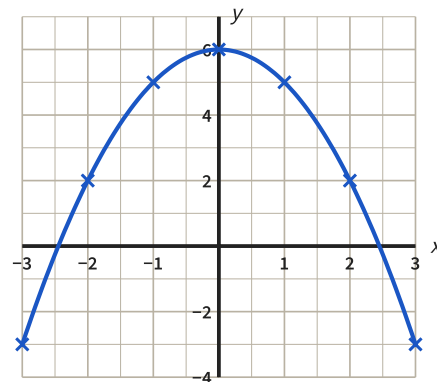


11

Complete the table for $y = 6 - x^2$ and draw the graph.

x	-3	-2	-1	0	1	2	3
y	-3	2	5	6	5	2	-3

Highest point $(0, 6)$

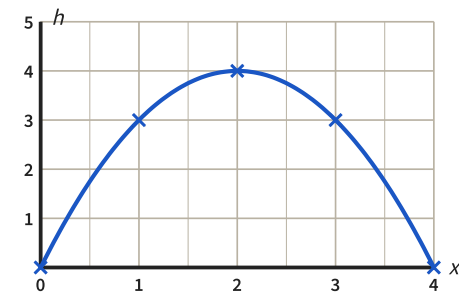


12

A jet of water from a fountain has height h metres when it is x metres along the ground, where $h = 4x - x^2$. Draw the graph. What is the greatest height of the water?

x	0	1	2	3	4
h	0	3	4	3	0

Greatest height 4 m



Plotting Quadratic Graphs *further practice*

ANSWERS

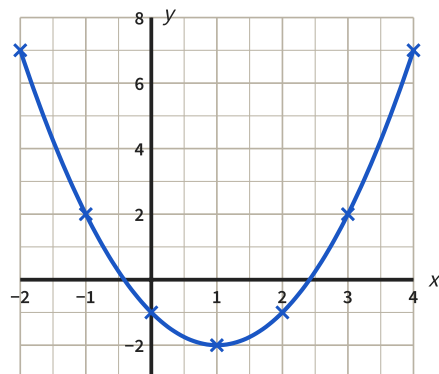
13

Complete the table for $y = x^2 - 2x - 1$ and draw the graph. Use your graph to estimate the values of x where the graph crosses the x axis.

x	-2	-1	0	1	2	3	4
y	7	2	-1	-2	-1	2	7

$x =$ about -0.4 and 2.4

accept -0.5 to -0.3 and 2.3 to 2.5

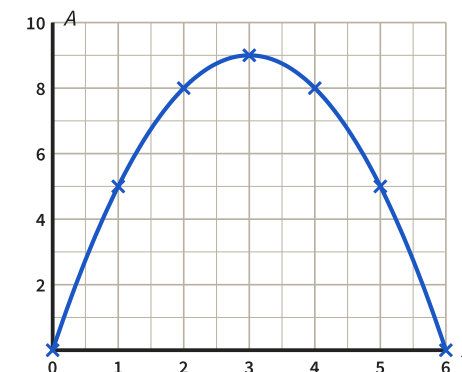


14

A rectangle has a perimeter of 12 cm. Its width is x cm, so its length is $(6 - x)$ cm and its area is $A = x(6 - x)$ cm². Draw the graph. Which width gives the greatest area?

x	0	1	2	3	4	5	6
A	0	5	8	9	8	5	0

Width 3 cm (area 9 cm²)



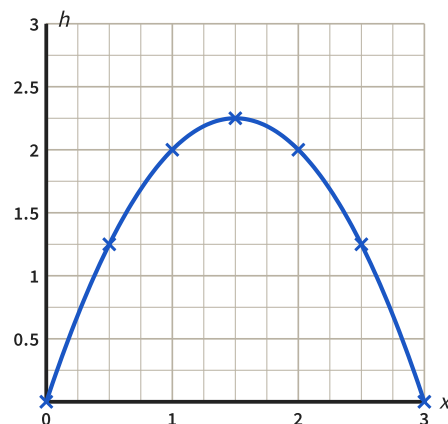
15

A dolphin leaps out of the water. It is h m above the water when it has moved x m forward, where $h = 3x - x^2$. Draw the graph. Find its greatest height and how far forward it moves before it lands.

x	0	0.5	1	1.5	2	2.5	3
h	0	1.25	2	2.25	2	1.25	0

Greatest height 2.25 m

Distance 3 m



16

Leo made this table for $y = x^2 - 3x$. One of his values is wrong. Plot his points. Which value is wrong? Explain.

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

Wrong value at $x = -1$

$x = -1$ should give 4, not 2: $(-1)^2 = 1$, then $1 + 3 = 4$. Leo's point is off the smooth curve.

