

Drawing the Graphs of Quadratic Equations - PDF Copy

The presentation contains the slides below with the objective of enabling students to: **Draw the graphs of quadratic equations.** The presentation contains explanation and graphs to draw that can be checked with answers.

Drawing the Graphs of Quadratics

Objectives:
Draw the graphs of quadratics that have the general form
 $y = ax^2 + bx + c$

Grade D - B Topic

☆ 1

How to draw the graph of $y = x^2 - 2x - 3$

Draw a table and put the x numbers at the top. The exam question will usually tell you which x numbers to use. In this case we've used the integer values $-2 \leq x \leq 4$

☆ 2

How to draw the graph of $y = x^2 - 2x - 3$

x	-2	-1	0	1	2	3	4
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Find the value of the x^2 part of the equation. This will always be a positive value

☆ 3

How to draw the graph of $y = x^2 - 2x - 3$

x	-2	-1	0	1	2	3	4
x^2	4	1	0	1	4	9	16

Calculate the value of $2x$

☆ 4

How to draw the graph of $y = x^2 - 2x - 3$

x	-2	-1	0	1	2	3	4
x^2	4	1	0	1	4	9	16
$2x$	-4	-2	0	2	4	6	8

Calculate the value of $x^2 - 2x$

☆ 5

How to draw the graph of $y = x^2 - 2x - 3$

x	-2	-1	0	1	2	3	4
x^2	4	1	0	1	4	9	16
$2x$	-4	-2	0	2	4	6	8
$x^2 - 2x$	8	3	0	-1	0	3	8

Finally do the -3 part of the equation by subtracting 3 from the $x^2 - 2x$

☆ 6

How to draw the graph of $y = x^2 - 2x - 3$

x	-2	-1	0	1	2	3	4
x^2	4	1	0	1	4	9	16
$2x$	-4	-2	0	2	4	6	8
$x^2 - 2x$	8	3	0	-1	0	3	8
$x^2 - 2x - 3$	5	0	-3	-4	-3	0	5

You have done everything that the equation requires so now you have the y values for each of the x values

☆ 7

Here are the coordinates

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

Plot the coordinates

Now we can join the points with a curve like this...

☆ 8

Here are the coordinates

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

The curve is called a parabola and the graphs of ALL quadratic equations will have a similar curve

☆ 9

x	-3	-2	-1	1	2	3	4
x^2	9	4	1	1	4	9	16
$x^2 - x$	12	6	2	0	2	6	12
$x^2 - x - 1$	11	5	1	-1	1	5	11
y	11	5	1	-1	1	5	11

i. Complete the above table for the equation
 $x^2 - x - 6$

ii. Draw the graph of this equation

☆ 10

x	-3	-2	-1	1	2	3	4
x^2	9	4	1	1	4	9	16
$x^2 - x$	12	6	2	0	2	6	12
$x^2 - x - 1$	11	5	1	-1	1	5	11
y	11	5	1	-1	1	5	11

i. Complete the above table for the equation
 $x^2 - x - 6$

ii. Draw the graph of this equation

☆ 11