Graphing a Quadratic Function in Standard Form

$y = ax^2 + bx + c$

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Instructions

Print or copy page 3 and 4 double sided.

Place the paper so the examples are face up.

Cut along the dotted lines to create flaps.

Fold the flaps inwards.

Glue the foldable into notes or on a piece of construction paper.

Go through the foldable with your students.

Find the y value of the vertex

Find the x value of the vertex

Plot the coordinates from the table

Make a table of values

Graphing a Quadratic Function in Standard Form

$y = ax^2 + bx + c$

To find the x value of the vertex use the formula

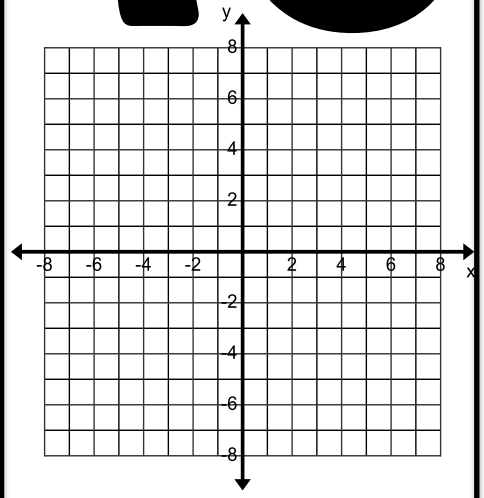
$$x = \frac{-b}{2a}$$

$f(x) = x^2 - 4x + 3$

To find the y value of the vertex substitute the value of x into the equation

Make a table of values with x values below and above the x value of the vertex

x	f	$x^2 - 4x +$	y



Plot the coordinates from the table and sketch the parabola

Find the y value of the vertex

Find the x value of the vertex

Plot the coordinates from the table

Make a table of values

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To find the x value of the vertex use the formula

$$x = \frac{-b}{2a}$$

$f(x) = x^2 - 4x + 3$

$a = 1$, $b = -4$, and $c = 3$

$$x = \frac{-b}{2a} = \frac{4}{2} = 2$$

The vertex is (2,)

The axis of symmetry is the line $x = 2$

$f(x) = x^2 - 4x + 3$

$f(2) = (2)^2 - 4(2) + 3$

$y = 4 - 8 + 3$

$y = -4 + 3$

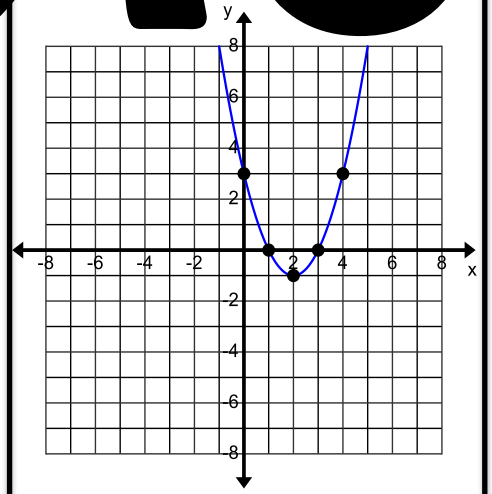
$y = -1$

The vertex is (2, -1)

To find the y value of the vertex substitute the value of x into the equation

Mak table of values with x values below and above the x value of the vertex

x	f x² – 4x +	y
0	$0^2 - 4(0) + 3$	3
1	$1^2 - 4(1) + 3$	0
2	This is the vertex	-1
3	$3^2 - 4(3) + 3$	0
4	$4^2 - 4(4) + 3$	3



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