

Intro: Parent Function

Quadratic Parent Function!

Parent Function:

$$y = x^2$$

parabola The name for the graph of a quadratic.

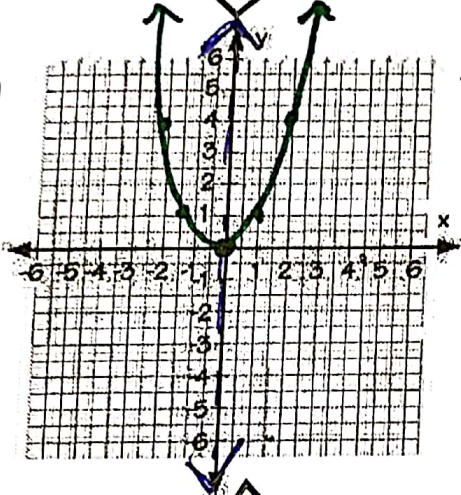
This parabola has not been transformed!

y-intercept: point where the parabola crosses the **y-axis**
 * **x** will always be zero
 (0, 0)

zeros roots
 ↓

Table:

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



x-intercepts: point where the parabola crosses the **x-axis**
 * **y** will always be zero.
 (0, 0) & (, 0)

A.O.S

Axis of Symmetry: line that "cuts" the parabola in half

$$x = 0$$

Vertex: highest or lowest point on the parabola.

$$(0, 0)$$

highest pt: **maximum**

lowest pt: **minimum**

We have a minimum

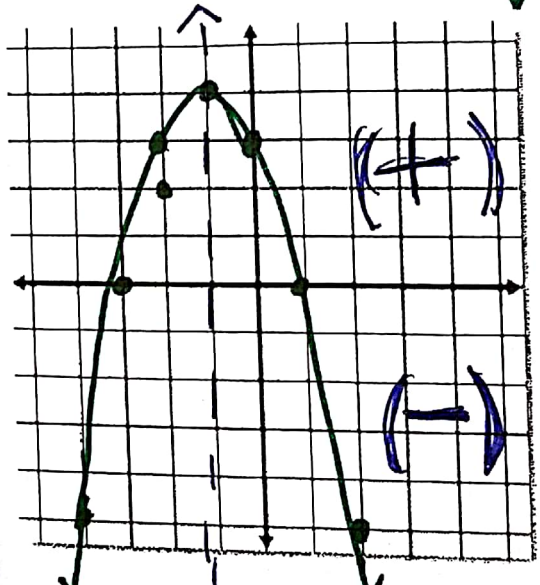
Intro: Key Features

$$y = -x^2 - 2x + 3$$

parabola
we graphed a parabola

Domain
Range
Increasing
Decreasing
Positive
Negative
Zeros

Quadratic Equation:



axis of symmetry: $x = -1$
 vertex: $(-1, 4)$ y-intercept: $(0, 3)$
 opens up or down?
 minimum or maximum?

Intro: Key Features

$$y = -x^2 - 2x + 3$$

Domain	x-values $(-\infty, \infty)$
Range	y-values $(-\infty, 4]$
Increasing	$x < -1$
Decreasing	$x > -1$
Positive	When above x-axis y-values
Negative	When below x-axis y-values
Zeros	$(-3, 0)$ $(1, 0)$