

3.1 Quadratic Functions in Vertex Form

* A quadratic function is a function that is a 2nd degree polynomial.

ex.

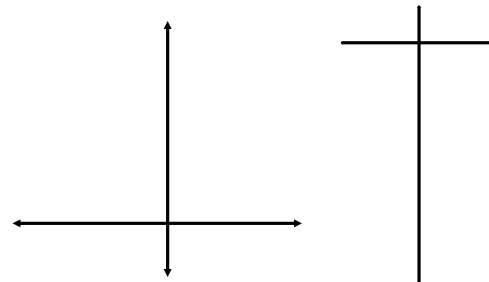
* The base function is:

* Graphically, a quadratic function looks like this _____, and is called a

* The properties that interest us are:

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* Here are some key features of the base quadratic function:



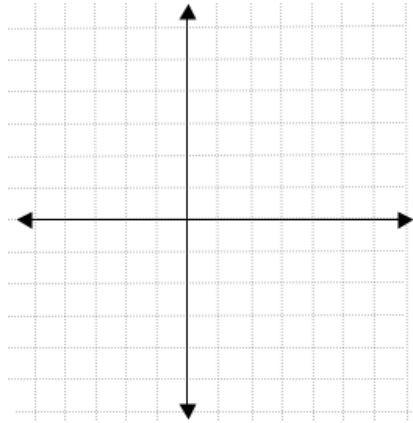
* A quadratic function is in vertex form when it is written like this:

In this form we can easily identify its:

- vertex _____
- Axis of symmetry _____
- Direction of opening _____

ex.

ex. From the graph of $y = x^2$, graph $y = (x - 3)^2 + 2$, $y = -2x^2$, and $y = 0.5x^2$



How does the value of a influence the graph?

* We call the x-intercepts the **zeroes** of the quadratic function. This is where the graph crosses the x-axis.

* How can we determine the equation the function based on its graph?

