

# 1.1 Graph Quadratic Functions in Standard Form

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**Quadratic Function** is a function that can be written in **Standard Form**  $y=ax^2+bx+c$  where  $a \neq 0$

The graph of a quadratic function is called a **Parabola**

**Vertex** is the lowest or highest point on a parabola. (h,k)

**Axis of Symmetry**- Divides the parabola into mirror images and passes through the vertex  
The equation for the A.O.S. can written as  $x=$

## Graphing $y=ax^2$

+a the graph opens up		-a the graph opens down
$ a  > 1$ the graph is more narrow		$ a  < 1$ the graph is wider

## Graphing $y=ax^2+c$

+c moves the entire graph up		-c moves the entire graph down
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## Graphing $y=ax^2+bx+c$

Step 1: Vertex (h,K) special (x,y)

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

Step 2: Plug back into equation to solve for y or use graphing calculator

Step 3: Get 2 points above and two points below vertex from table

Step 4: Graph all 5 points

## Minimum and Maximum values

Find the y value of the vertex

Written as  $y =$

+a the graph will have a minimum value

-a the graph will have a maximum value