

Key Take Aways from 9.1

* $y = ax^2 + bx + c$, $a \neq 0$ is a quadratic function

* $y = x^2$ is the most basic quadratic function (Parent Function)

* Know how a quadratic will look graphed WITHOUT graphing it:

"a" value: effects how narrow or wide the parabola is

- if $|a|$ is greater than 1, the parabola will be more narrow than the parent function
- if $|a|$ is less than 1 (But $\neq 0$), the parabola will be more wide than the parent function

"a" value: Also determines if the parabola is upward or downward facing

- a positive "a" value is upward facing
- a negative "a" value is downward facing

"bx" value: helps you identify the line of symmetry

→ if a "bx" does not exist, the line of symmetry is $x=0$

→ if a "bx" does exist, the line of symmetry is not $x=0$

"c" value: is the y-intercept

* When you do graph(show):

→ at least 3 ^{labeled} points (1 pt. MUST be the vertex)

→ arrows showing the parabola extends off to infinity

→ highlight the line of symmetry

→ extend the parabola through the ENTIRE graph