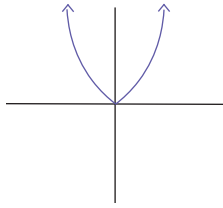


Quadratic Equations and Graphs

$$y=x^2$$



Quadratic General Equation: $f(x) = ax^2 + bx + c$

$$h = \frac{b}{2a} \rightarrow \text{This is used to convert from General to Graphing equation}$$

Quadratic Graphing Equation: $f(x) = a(x-h)^2 + k$

Vertex = (h,k)

*Vertex is either min or max of graph

Variable	Rule i.e. how variable effects graph	Example
k	Graph moves up or down if k is positive graph move up if k is negative graph moves down	$y = x^2 + 1$ graph moved up 1 Vertex: (0,1)
h	Graph moves left or right if h is positive graph move left if h is negative graph moves right *Remember h is negative in the equation this is why it moves in opposite direction on x-axis	$y = (x+1)^2$ graph moved left 1 Vertex: (-1,0) *Remember the h is negative so graph moves opposite
a	Graph face up or down and either becomes skinnier or wider if a is positive graph faces up if a is negative graph faces down if a > 1 graph is skinnier if a < 1 graph is wider	$y = 2x^2$ graph is skinnier Vertex: (0,0) $y = -1/2x^2$ graph is flipped upside down because of negative and wider Vertex: (0,0)