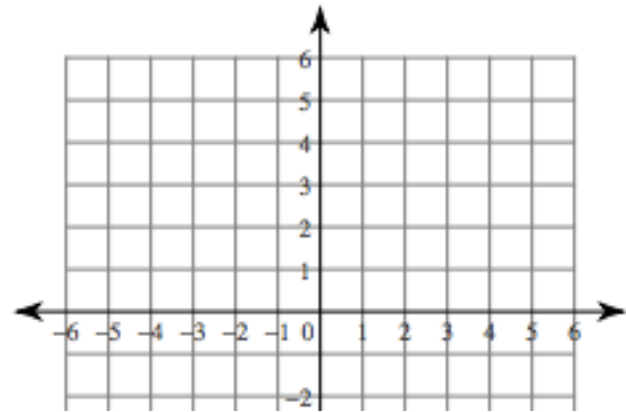


Quadratic Functions

The simplest quadratic function is the *quadratic parent function*, _____ or _____.

x		y	$f(x) = y$	(x, y)
-2				
-1				
0				
1				
2				



What do you notice about the table?

What do you notice about the graph?

Key Vocabulary:

The _____ is the _____ of the graph.

The _____ is the line dividing the parabola into _____.

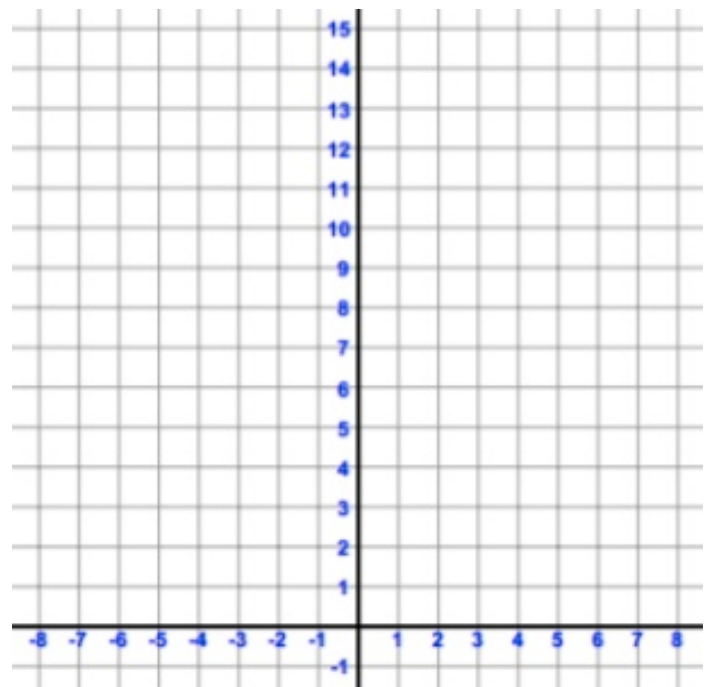
Graphing $y = ax^2$

Ex. 1 $y = \frac{1}{3}x^2$

x		y	$f(x) = y$	(x, y)

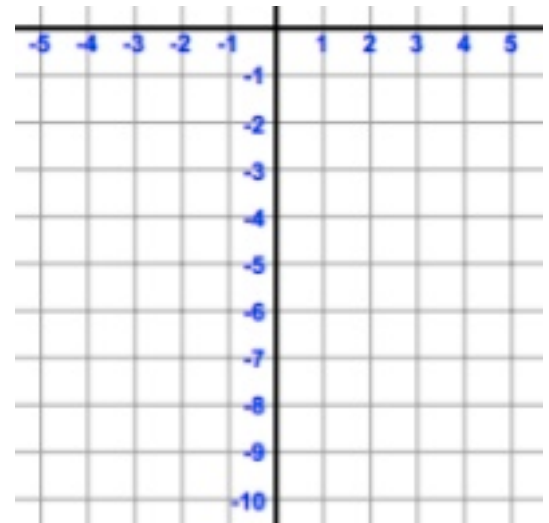
What are good values to choose for x ? Why?

How do we get the other side of the parabola?



You Try 2 $y = -2x^2$

x		y	$f(x) = y$	(x, y)



What is the ordered pair of the vertex?

How does the “a” value affect the quadratic parent function? $f(x) = ax^2$

Graph	Opens Where?	Type of Vertex?	Pattern?	Sign of a ?
Ex. 1				
You Try 2				

Graph	Wider vs. Narrower than $f(x) = x^2$	Fraction vs. Integer for a ?
Ex. 1		
You Try 2		

Key Idea

- The a value affects the

_____ and _____.

Match the function with its description in comparison to the parent function.

- | | |
|--------------------------|------------------------------|
| 1) $y = 3x^2$ | a. opens upward & wider |
| 2) $y = \frac{1}{4}x^2$ | b. opens downward & wider |
| 3) $y = -\frac{2}{3}x^2$ | c. opens upward & narrower |
| 4) $y = -4x^2$ | d. opens downward & narrower |