

Math 2 Unit 10 Notes 1
Quadratic Functions: Desmos Exploration

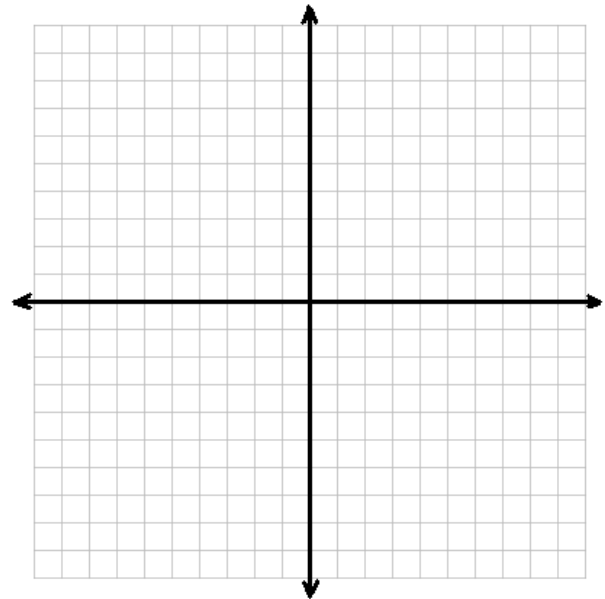
Name: _____
 Date: _____ Per: _____

Section A – Use Desmos.com for this exercise.

Directions: Graph each trio of equations at www.desmos.com on the same graph, fill out the chart, and below the chart record your observations in complete sentences.

Set 1:

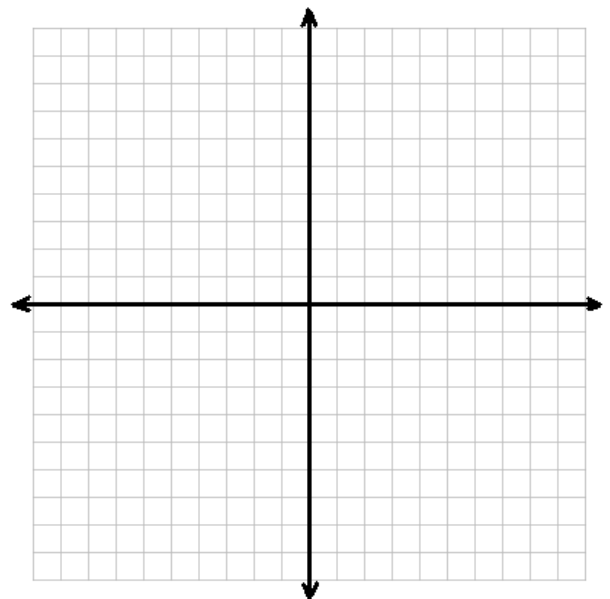
Equation	“a” value
$y = x^2$ Color of the parabola is	
$y = 3x^2$ Color of the parabola is	
$y = 6x^2$ Color of the parabola is	



Observations: As the “a” value increases, it causes the graph to...

Set 2:

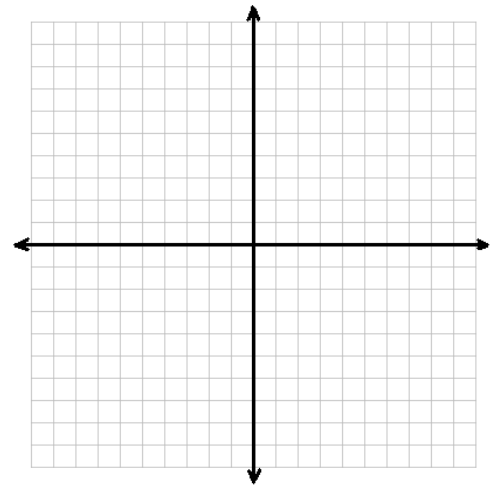
Equation	“a” value
$y = x^2$ Color of the parabola is	
$y = \frac{1}{2}x^2$ Color of the parabola is	
$y = \frac{1}{5}x^2$ Color of the parabola is	



Observations: As the “a” value decreases, it causes the graph to...

Set 3:

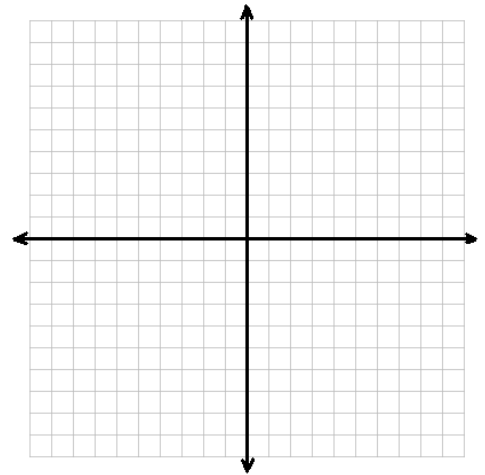
Equation	"a" value
$y = 2x^2$	
Color of the parabola is	
$y = -2x^2$	
Color of the parabola is	
$y = -\frac{1}{2}x^2$	
Color of the parabola is	



Observations: As the "a" value becomes a negative, it causes the graph to...

Set 4:

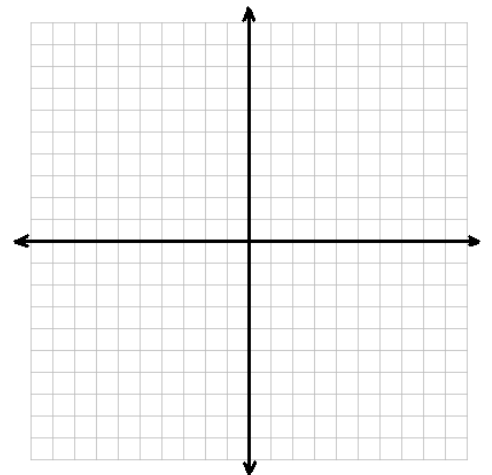
Equation	"c" value
$y = x^2 + 1$	
Color of the parabola is	
$y = x^2 + 3$	
Color of the parabola is	
$y = x^2 + 6$	
Color of the parabola is	



Observations: As the "c" value increases, it causes the graph to...

Set 5:

Equation	"c" value
$y = x^2 - 2$	
Color of the parabola is	
$y = x^2 - 4$	
Color of the parabola is	
$y = x^2 - 7$	
Color of the parabola is	



Observations: As the "c" value decreases, it causes the graph to...

Section B – Do not use desmos.com

Directions: Based on what you learned in Section A. Make a sketch of the graph that will be generated by the given equation.

The **Domain** of a function is the set of numbers that can be used as "input" values (x -coordinates).

The **Range** of a function is the set of numbers that can be obtained as "output" values (y -coordinates)

$y = x^2 + 3$	
x	y
-2	
-1	
0	
1	
2	
Color:	

Domain: _____

Range: _____

$y = 3x^2$	
x	y
-2	
-1	
0	
1	
2	
Color:	

Domain: _____

Range: _____

$y = -2x^2 - 1$	
x	y
-2	
-1	
0	
1	
2	
Color:	

Domain: _____

Range: _____

