MBF 3C: UNIT 5 – Factoring and Expanding with Quadratics
Lesson 3: Investigating Standard Form

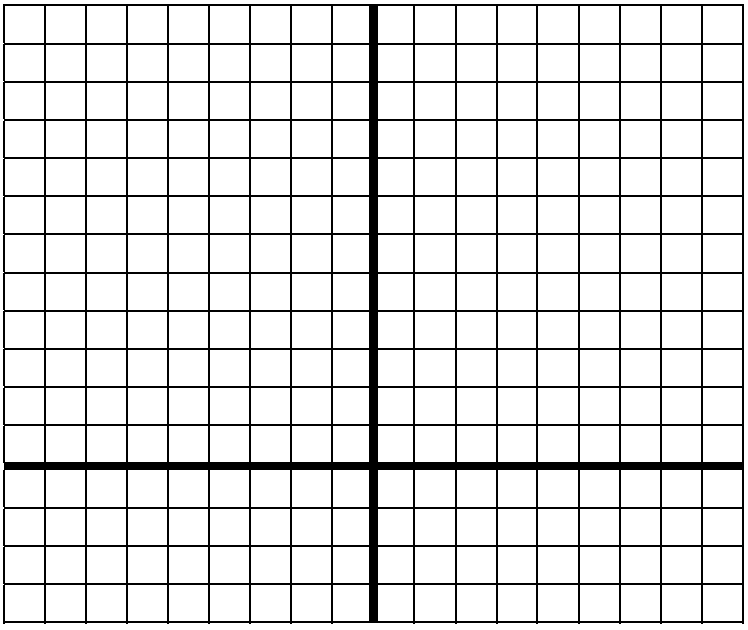
In this investigation you will graph different parabolas and determine the information about the equation of a quadratic relation in "standard form".

You will need to be able to determine the following about a parabola:
The y - intercept
The direction of opening
The step pattern

TECHNOLOGY OPTION
To help you graph and plot the parabolas, enter the equation in the [Y =] screen on your TI – 83 graphing calculator, press [graph] to see the graph and press [2nd] [graph] to see a table of values for the parabola

Parabola Investigation #1

Equation	**$y = x^2 - 2x - 3$**
Table of Values	
x	**y**
-2	
-1	
0	
1	
2	
3	
4	
Fill in the following information about the parabola:	



What is the Direction of Opening?	What is the step pattern?	What is the y-intercept?
_____	____, ____, ____	_____

What do you notice about the y-intercept and the equation?

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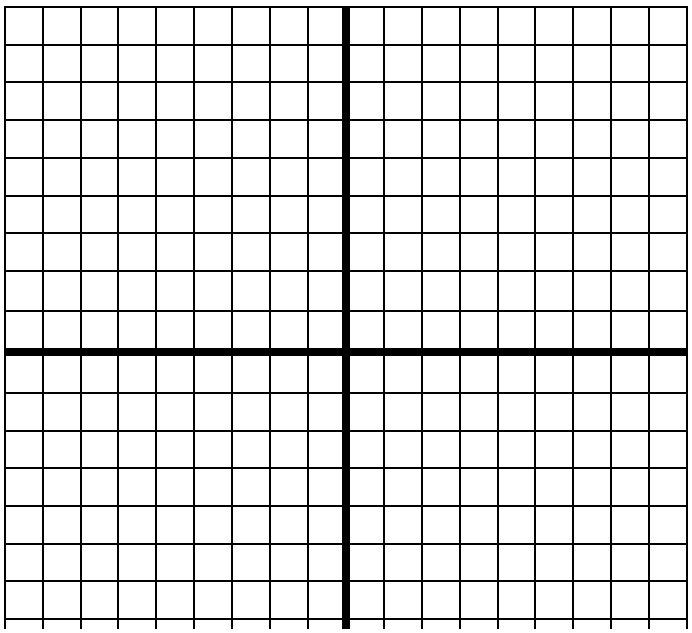
Equation	$y = -2x^2 + 12x - 10$

Table of Values	
x	y
0	
1	
2	
3	
4	
5	
6	



Fill in the following information about the parabola:

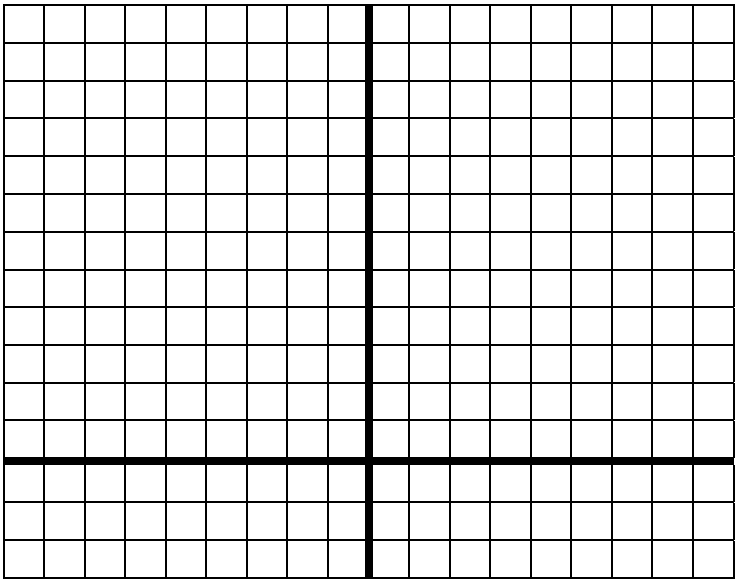
What is the Direction of Opening?	What is the step pattern?	What is the y-intercept?
_____	____, ____, ____	_____

How does the y – intercept relate to the equation?

Parabola Investigation #3

Equation	$y = 3x^2 + 12x + 9$

Table of Values	
x	y
-5	
-4	
-3	
-2	
-1	
0	
1	



Fill in the following information about the parabola:

What is the Direction of Opening?	What is the step pattern?	What is the y-intercept?
_____	____, ____, ____	_____