Quadratic Functions: Investigation   Name_____

Function	$-\dfrac{b}{2a}$	Vertex (Extremum) (,)	$b^2 - 4ac$	Number of x-intercepts (Roots)
$f(x) = x^2 - 6x + 7$ a = b = c =		(3 , - 2)		2
$f(x) = -x^2 - 6x +$ a = b = c =				

1

Function	$-\dfrac{b}{2a}$	Vertex (Extremum) (,)	$b^2 - 4ac$	Number of x-intercepts (Roots)
$f(x) = -2x^2 - 4x$ a = b = c =				
$f(x) = x^2 - 5x + 6$ a = b = c =				

2

Function	$-\dfrac{b}{2a}$	Vertex (Extremum) (,)	$b^2 - 4ac$	Number of x-intercepts (Roots)
$f(x) = x^2 - 4x$ a = b = c =				
$f(x) = x^2 - 6x + 9$ a = b = c =				

Function	$-\dfrac{b}{2a}$	Vertex (Extremum) (,)	$b^2 - 4ac$	Number of x-intercepts (Roots)
$f(x) = x^2 - 4x + 4$ $a =$ $b =$ $c =$				
$f(x) = x^2 + 14x + 49$ $a =$ $b =$ $c =$				

Function	$-\dfrac{b}{2a}$	Vertex (Extremum) (,)	$b^2 - 4ac$	Number of x-intercepts (Roots)
$f(x) = x^2 - 5x + 7$ a = b = c =				
$f(x) = -x^2 + 4x -$ a = b = c =				

Function	$-\dfrac{b}{2a}$	Vertex (Extremum) (,)	$b^2 - 4ac$	Number of x-intercepts (Roots)
$f(x) = -2x^2 - x -$ a = b = c =				
$f(x) = -x^2 + x - 3$ a = b = c =				

2)   Carefully study your results from the table of results you've completed.

Notice any patterns or anything interesting?

Describe *in detail* (as best as you can) below: