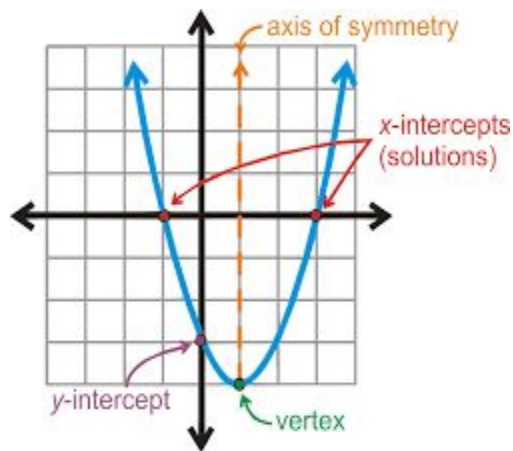


Parabola Exploration

Parts of a parabola



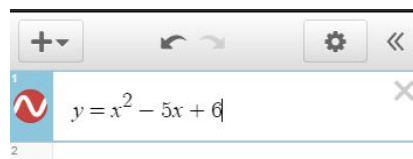
Forms of quadratic equations

Equation	Parabola Form
$y = ax^2 + bx + c$	Standard Form
$y = a(x-h)^2 + k$ or $y - k = a(x-h)^2$	Vertex Form
$y = a(x-x_1)(x-x_2)$	Factored Form (also called Intercept Form)

Objective: Using Desmos.com you will explore how the quadratic relate to each other and what key features the forms give you.

Procedure:

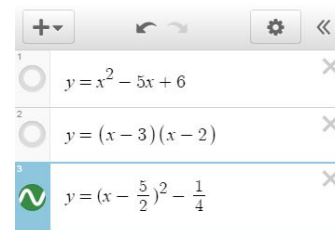
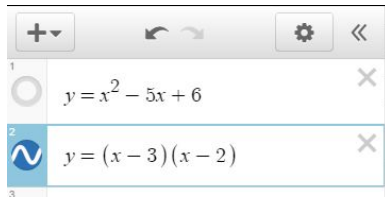
- 1) Go to www.Desmos.com



- 2) Type $y=x^2-5x+6$ into the equation editor
- 3) Identify the y-intercept on the graph and see how it relates to the equation.

Parabola Exploration

4) Type in $y=(x-3)(x-2)$. Click the graph button on the first equation to turn it off. Describe the relationship between the x-intercepts (zeros)



5) Now type in $y=(x-5/2)^2 - 1/4$, Turn off the first two equations.

Click on the vertex and find where these numbers are located in the equation.

6) Looking at your results above and fill the table in below:

Name	Form	What we get from the formula
Standard	$y=ax^2+bx+c$	
Intercept or factored	$y=(x-a)(x-b)$	
Vertex	$y=a(x-h)^2+k$	