

QUADRATIC FUNCTION FORMS

MCC9-12.F.IF.8

Write a quadratic function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.

EQ: How should we write and graph a quadratic function of the forms $f(x) = ax^2 + bx + c$ (standard form) and $f(x) = a(x-h)^2 + k$ (vertex form) to reveal and explain different properties of the function?

CONVERTING QUADRATIC EQUATIONS FROM STANDARD FORM INTO VERTEX FORM

(Standard Form)	TO	(Vertex Form)
$f(x) = ax^2 + bx + c$	$\Rightarrow$	$a(x-h)^2 + k$

Step 1	Step 2	Step 3	Step 4	Step 5
How should we identify a , b and c ?	How should we find the axis of symmetry $x = h = -\frac{b}{2a}$?	How should we find $f(h)$?	How should we rewrite $f(x)$ in vertex form?	On a grid, how do we graph the axis of symmetry and the function and identify the vertex as a maximum or minimum?

For #1-3, how should we write the quadratic function $f(x)$ from standard to vertex form and graph $f(x)$?

	① $f(x) = -2x^2 + 12x - 13$	② $f(x) = -\frac{1}{2}x^2 + 4x - 7$	③ $f(x) = -2x^2 + 4x + 1$
Step 1			
Step 2			
Step 3			
Step 4			
Step 5			