

Graphing Form: $y = a(x - h)^2 + k$	Factored Form: $y = a(x - m)(x - n)$	Standard Form: $y = ax^2 + bx + c$
--	---	---------------------------------------

Step 1: Identify the parameter a. (You'll use this later)	Use this space to make a note of why the step is important or why it makes sense.
Example: $y = 2x^2 + 6x - 20$ $a = \underline{2}$	
Step 2: Find the x-intercepts. (Factor & Z.P.P <u>or</u> Quadratic Formula)	
Example: $y = 2x^2 + 6x - 20$ $2(x + 3)(x - 10)$ $2(x + 5)(x - 2)$ x-intercepts = $\underline{(-5, 0)}$ & $\underline{(2, 0)}$	
Step 3: Average the x-intercepts. (The x-value you find is the <i>line of symmetry</i> AND the <i>x-coordinate of the vertex</i> AND the parameter <i>h</i> .)	
Example: $\frac{-5 + 2}{2} = \frac{-3}{2} = -1.5$ Line of symmetry / x-coordinate of vertex / $h = \underline{-1.5}$	
Step 4: Find the coordinates of the vertex. (Substitute that x-value into the original equation.)	
Example: $2(-1.5 + 5)(-1.5 - 2)$ $2(3.5)(-3.5)$ -24.5 Vertex $(\underline{-1.5}, \underline{-24.5})$ $h = \underline{-1.5}$ $k = \underline{-24.5}$	
Step 5: Use the information you found to write the equation in graphing form. (Substitute a, h, and k.)	
Example: $y = 2(x + 1.5)^2 - 24.5$	