

Notes: Graph From Standard Form of Quadratic Equation

Standard Form of a Quadratic:  $f(x) = ax^2 + bx + c$

1. Identify the a, b, and c.
2. Find the axis of symmetry:  $= \frac{-b}{2a}$ , this is the x of the vertex.
3. Substitute the x back into the original equation to find the y of the vertex.
4. Plot the vertex.
5. Use the stretch to graph 5 points.

Example:  $f(x) = x^2 + 4x - 8$

Identify the a, b, and c.	$a = 1, b = 4, c = -8$
Find the <u>axis of symmetry</u> : $= \frac{-b}{2a}$ , this is the x of the vertex.	$x = \frac{-b}{2a} = \frac{-4}{2(1)} = -2$
Substitute the x back into the original equation to find the y of the vertex.	$y = x^2 + 4x - 8 = (-2)^2 + 4(-2) - 8 = -12$
Plot the vertex.	$(-2, -12)$
<ol style="list-style-type: none"> <li>1. Use the stretch to graph 5 points. <math>a = 1</math></li> </ol>	

Example:  $f(x) = x^2 + 6x - 2$

1. Identify the a, b, and c.
2. Find the axis of symmetry:  $x = \frac{-b}{2a}$ , this is the x of the vertex.
3. Substitute the x back into the original equation to find the y of the vertex.
4. Plot the vertex.
5. Use the stretch to graph 5 points.

