



**The Betty East Tutoring
Center at Victoria College**

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Steps in graphing a quadratic function

Step 1: Find the vertex

$$\left(-\frac{b}{2a}, f\left(-\frac{b}{2a}\right)\right), \quad \text{where, } f(x) = ax^2 + bx + c$$

$-\frac{b}{2a}$ will be your x coordinant of your vertex.

After you find this plug this number in for every x term in your equation. The answer to this will be your y coordinate

$$\left(-\frac{b}{2a}, f\left(-\frac{b}{2a}\right)\right)$$

Step 2: Plot Vertex on graph.

After you plot your vertex, make an $X Y$ chart and plot one more point on the left of your vertex and one on the right for a total 3 points.

Step 3: Connect your points:

Remember if you have a coefficient in front of your x^2 term is negative negative a then your parabola will face down and have a maximum if you have a postive a coefficient in front of your x^2 term it will open up and have a minimum.

Note: When solving word problems and it states maximum or minimum you are finding vertex. You will have to read the problem to figure out if it wants the x term or y term and remember...Always answer word problems with words.