Writing Assignment Example

Convert to Vertex form, describe all transformations and Graph the following (if you use Calculator you must write down the sequences of buttons you pushed.)

In order to convert this into Vertex form which is:

You must find a, h, and k. These letters stand for the coefficient in front of x squared (a) this will give the stretch (narrowing), shrink (widening), and reflection of the graph. “h” is x-coordinate of the vertex and also gives the horizontal shift (translation), and “k” is the y-coordinate of the vertex and also gives the vertical shift (translation). We know that a = 1 for the equation in Standard Form. Thus, all that remains is to find the vertex (h,k). We know from class that “h” or x-coordinate of the vertex is actually:

Thus, the “h” value here is

Now all that remains is to find the “k” value or y-coordinate of the vertex. We find this by using the -3 as an input value for the equation above to find out the output value which will be “k.”

Now we have our a = 1, h = -3, and k = -1, we are now ready to convert to Vertex form.

Which yields:

And the conversion is done.

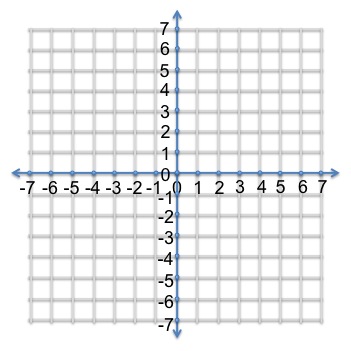
In order to describe all of the transformations in this equation we need a, h, and k again. Having already found them in the last portion we know:

a = 1 tells us that the graph does not reflect, it does not widen, nor does it narrow.

h = -3 tells us that the graph translates or shift horizontally to the left 3 units.

k = -1 tells us that the graph translates or shifts vertically down 1 unit.

This means that the graph will look as follows.



And so we have completed the assignment.