CCSS Advanced Algebra 3 More Quadratic Transformations:

1. Let .

* 1. What are the x-intercepts of the function? y-intercept?
  2. Consider the transformation . What are the x-intercepts of ?
  3. Consider the transformation . What is the y-intercept of ?

2. For the function

* 1. Find the x-intercepts and the y-intercept.
  2. What transformation would be applied to that would result in the new function?
  3. Explain why the transformed function has the same x-intercepts as .

3. Write

a. in standard form, .

b. Complete the square (see below for notes) to write in Graphing Form and write the vertex of the parabola.

c. What is the vertex of ?

d. What is the vertex of ?

4. Completing the square practice (see below for notes). Write each quadratic function in Graphing Form and determine the vertex (BOTH x AND y):

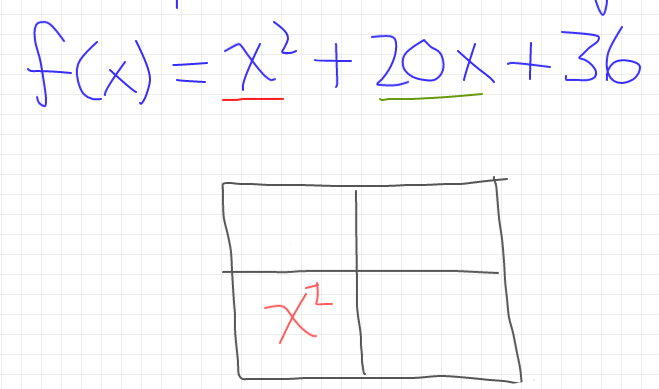
a. b.

c. d.

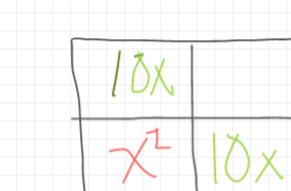
e.

5. For each quadratic equation above, describe the transformations that would be required to go from the parent graph () to the new function. Be specific using the terms horizontal/vertical translation, reflection, dilation.

**Completing the Square Notes (Converting a Quadratic Function from Standard to Graphing Form):**

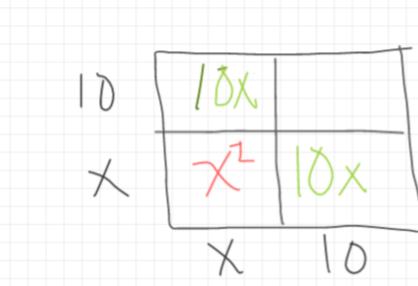
Example: 

Step 1: Create a generic rectangle and put the in the lower left corner.

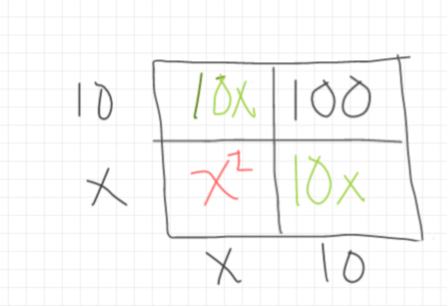


Step 2: Split the in half and place each half in the generic rectangle.

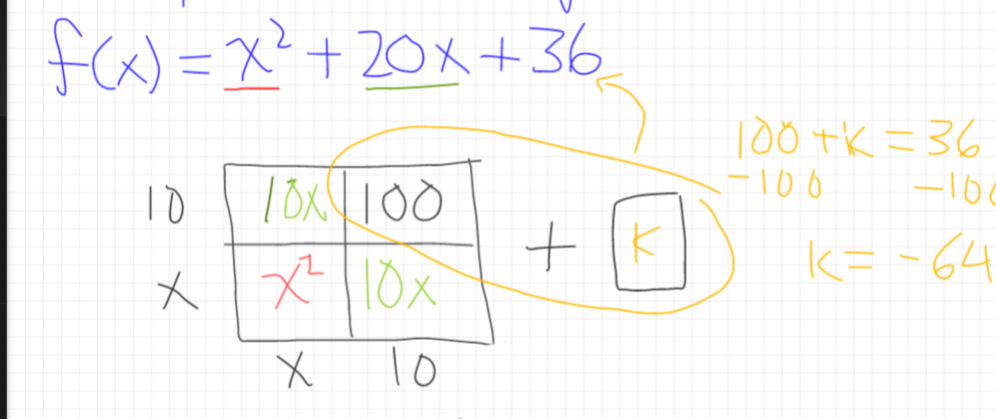
\*\*Why does it make sense to do this?



Step 3: Fill out the outside (base and height) of the generic rectangle.



Step 4: Complete the inside of the generic rectangle using the outside values.



Step 5: Determine what value must be added to the generic rectangle to match the original function.

Step 5: Write the function in Graphing Form.