**Activity 2.1.2 How to Move It! with Standard and Vertex Forms**

Now that we have a solid set of rules for our horizontal and vertical shifts, we need to discuss the connections of these shifts to the various forms parabolas can be written in.

**Standard Form Vertex Form**

  

1. When we write , is that function written in standard form, vertex form or both?

If standard form, identify the values of a, b, and c.

a = \_\_\_\_\_\_\_\_\_ b = \_\_\_\_\_\_\_\_\_ c = \_\_\_\_\_\_\_\_\_

If vertex form, identify the values of a, h, and k.

a = \_\_\_\_\_\_\_\_\_ h = \_\_\_\_\_\_\_\_\_ k = \_\_\_\_\_\_\_\_\_

2. When we reflect back on one of our transformed examples, , what form is this written in?

If standard form, identify the values of a, b, and c.

a = \_\_\_\_\_\_\_\_\_ b = \_\_\_\_\_\_\_\_\_ c = \_\_\_\_\_\_\_\_\_

If vertex form, identify the values of a, h, and k.

a = \_\_\_\_\_\_\_\_\_ h = \_\_\_\_\_\_\_\_\_ k = \_\_\_\_\_\_\_\_\_

3. Now let’s reflect back on another one of our transformed examples, . What form is this written in?

If vertex form, identify the values of a, h, and k.

a = \_\_\_\_\_\_\_\_\_ h = \_\_\_\_\_\_\_\_\_ k = \_\_\_\_\_\_\_\_\_

It is possible to identify the values of a, b, and c from the standard form. First we must expand the binomial, combine any like terms and rewrite the function in standard form.

We can now write the function as  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Identify the values of a, b, and c.

a = \_\_\_\_\_\_\_\_\_ b = \_\_\_\_\_\_\_\_\_ c = \_\_\_\_\_\_\_\_\_

Let’s continue with that method of binomial expansion with some more examples.

4. Another transformed example was, . What form is this written in?

If vertex form, identify the values of a, h, and k.

a = \_\_\_\_\_\_\_\_\_ h = \_\_\_\_\_\_\_\_\_ k = \_\_\_\_\_\_\_\_\_

Expand the binomial, combine any like terms and rewrite the function in standard form.

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Identify the values of a, b, and c.

a = \_\_\_\_\_\_\_\_\_ b = \_\_\_\_\_\_\_\_\_ c = \_\_\_\_\_\_\_\_\_

5. . What form is this written in?

If vertex form, identify the values of a, h, and k.

a = \_\_\_\_\_\_\_\_\_ h = \_\_\_\_\_\_\_\_\_ k = \_\_\_\_\_\_\_\_\_

Expand the binomial, combine any like terms and rewrite the function in standard form.

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Identify the values of a, b, and c.

a = \_\_\_\_\_\_\_\_\_ b = \_\_\_\_\_\_\_\_\_ c = \_\_\_\_\_\_\_\_\_

6. . What form is this written in?

If vertex form, identify the values of a, h, and k.

a = \_\_\_\_\_\_\_\_\_ h = \_\_\_\_\_\_\_\_\_ k = \_\_\_\_\_\_\_\_\_

Expand the binomial, combine any like terms and rewrite the function in standard form.

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Identify the values of a, b, and c.

a = \_\_\_\_\_\_\_\_\_ b = \_\_\_\_\_\_\_\_\_ c = \_\_\_\_\_\_\_\_\_