GSE Algebra 1 **7.4 – notes** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Vertex** vs. **Standard** vs. **Intercept** forms

Vertex form Standard form Intercept form

Given the following scenario, create the equation in **vertex** form.

* You are ordering a quilt for a family member. The length of the square is reduced by 3 and then you add a little piece of fabric at the end that is 4 square meters.



Describe the shifts that have happened to this equation. Graph it.

Now let’s look at this equation. $y=x^{2}-6x+9$ What form is this?

Let’s convert it to vertex form using $ x=-\frac{b}{2a}$

 Graph it here.



Convert the following into **vertex** form. Convert the following into **standard** form.

 $y=x^{2}+4x+2 y=3(x-3)^{2}-7$

What form is the equation below in?

$$y=(x-1)(x+3)$$

Convert it to standard form.

Then convert it to vertex form. Graph it here.

Try this one.

What form is this one in? $y=2(x-2)(x-6)$

Convert it to **standard** form. Then convert it to **vertex** form.

Write out **vertex** form. Write out **standard** form. Write out **intercept** form.

Label what form each one is in.

1. $y=-3(x-1)^{2}+4$ 2) $y=-(x+3)(x-4)$ 3) $y=\frac{1}{2}x^{2}-4x+3$

Convert *from* **vertex** form to **standard** form.

1. $y=2(x+3)^{2}-3$ 5) $y=-\frac{1}{4}(4x-4)^{2}$ 6) $y=-(x-7)^{2}+5$

Convert *from* **standard** form to **vertex** form.

1. $y=4x^{2}-16x-1$ 8) $y=-\frac{1}{2}x^{2}+4x$ 9) $y=x^{2}-7x+3$

Convert *from* **intercept** to **standard** form.

1. $y=3(x-1)(x+3)$ 11) $y=-(x+2)(x+3)$ 12) $y=\frac{1}{3}(3x-9)(x+5)$

Where has each graph **moved**? ***List out all the transformations***.

1. $y=\frac{1}{3}(x-1)^{2}-3$ 14) $y=-4(x+2)^{2}$ 15) $y=-(x-10)^{2}+3$ 16) $y=x^{2}-4$

Let’s graph some.

1. $y=3(x-2)^{2}-4$



1. $y=-(x+1)(x-3)$



1. $y=\frac{1}{2}x^{2}-4x+3$