Go to: desmos.com Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Click the big red button that says Launch Calculator

(If you want to create an account first, you can. Then you can save your work.)

Click the 3 white horizontal bars in the very upper left corner and choose “Parabolas: Vertex Form”

Slide the blue dot and watch as *a* changes the shape:

1. What happens when *a* is bigger than 1?

2. What happens when *a* is between 1 and 0?

3. What happens when *a* is negative?

4. What happens when *a* is zero? (careful!)

5. Make *a* =1 and move *h* back and forth. Describe what you see.

6. Move *k* and describe the result.

7. Click the white bars and choose New Blank Graph. Type this:

$y=x^{2}$ {-2<x<2} [to type an exponent use ^ ]

8. Now type equation 2:

$y=-x^{2}+8$ {-2<x<2} [change the color if you’d like!]

9. Your turn! I made a “face”. You make something. You can add to my picture. Or make your own. Be creative. I will come take pictures of your art as class ends.

10. Pro-tip. Want eye-balls? Try this!

$(x+1)^{2}+\left(y-4\right)^{2}=0.1$

I wonder? $x=y^{2}$ ?