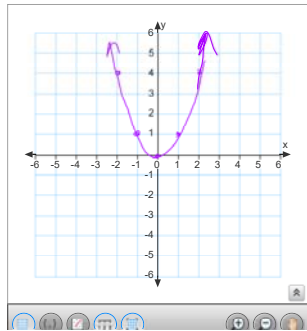


Parent Function

$$y = x^2$$

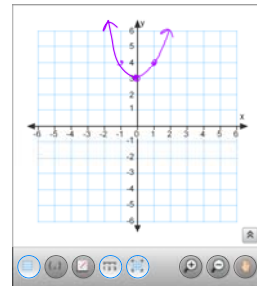


| x | y |
|----|---|
| 0 | 0 |
| -1 | 1 |
| 2 | 4 |
| -2 | 4 |

1)

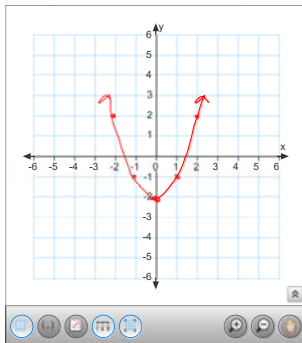
$$y = x^2 + \underline{\underline{3}}$$

| x | y |
|----|---|
| 0 | 3 |
| -1 | 4 |
| 1 | 4 |



Vertically translated 3 units up

2) $y = x^2 - 2$

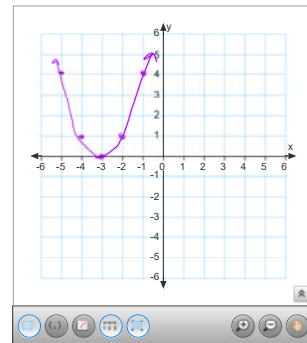


Vertically translated 2 units down

3)

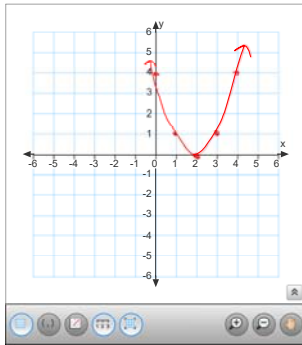
$$y = (x + 3)^2$$

| x | y |
|----|---|
| -3 | 0 |
| -4 | 1 |
| -2 | 1 |



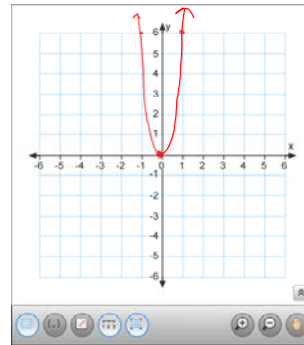
Horizontally translated 3 units left

4) $y = (x - 2)^2$



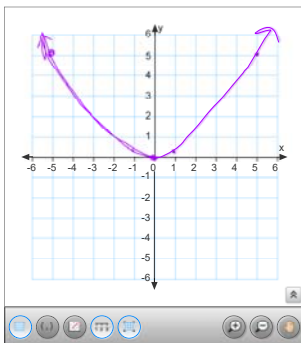
Horizontally translated 2 units right

5) $y = 6x^2$



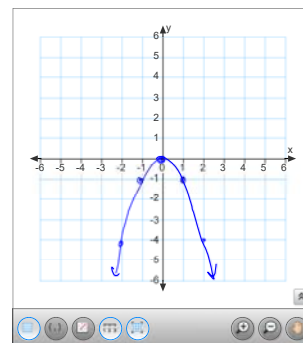
Vertically stretched by a factor of 6

6) $y = \frac{1}{5}x^2$



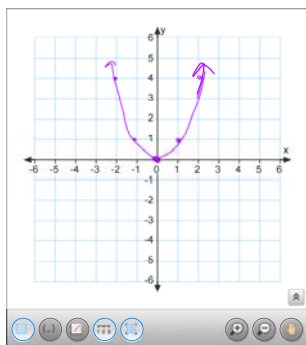
Vertically compressed by a factor of 1/5

7) $y = -x^2$



Reflected across the x-axis

8) $y = (-x)^2$

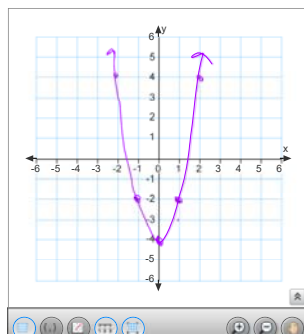


Hmmm...looks the same as $y = x^2$

TRUST ME...it's really been reflected across the **y-axis**.

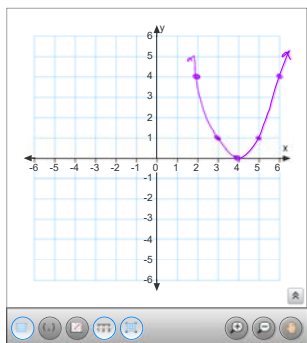
parent
 $y = \sqrt{x}$
 $y = \sqrt{(-x)}$

9) $y = 2x^2 - 4$



Vertically stretched by a factor of 2, vertically translated 4 units down.

10) $y = (-x + 4)^2$



Horizontally translated 4 units left, then reflected across the **y-axis**.

This information is on the note page I provided you in the packet.

Parent function : $y = |x|$

| Vertical Translation: | Horizontal Translation: |
|--|---|
| Translation up K units if $K > 0$ $y = x + k$ | Translation right h units if $h > 0$ $y = x - h $ |
| Translation down K units if $K < 0$ $y = x - k$ | Translation left h units if $h > 0$ $y = x + h $ |
| Vertical Stretch & Compression | Reflection: |
| Vertical Stretch, $a > 1$ $y = a x $ | Across the x -axis $y = - x $ |
| Vertical Compression, $0 < a < 1$ $y = a x $ | Across the y -axis $y = -x $ |

Take out your graphing calculator

We need to learn how to enter data into your Lists. They are called L1 and L2.
Before we can do that, let's make sure everyone's editor is set up the same.

*Press the STAT button on your calculator (it is to the right of the ALPHA key)

*Next press **5**, that will take you to **Set Up Editor**

*Now press **ENTER** it should respond with Done.

Next we will enter data into our lists....

Press STAT and then ENTER.....you should see something like the picture at the left. It may or may not have numbers in the lists.



| L1 | L2 | L3 | Z |
|---------|-----|-----|-----|
| 1 | 1 | --- | --- |
| 2 | 2 | --- | --- |
| 3 | 3 | --- | --- |
| 4 | 4 | --- | --- |
| 5 | 5 | --- | --- |
| 6 | 6 | --- | --- |
| 7 | 7 | --- | --- |
| 8 | 8 | --- | --- |
| 9 | 9 | --- | --- |
| 0 | 0 | --- | --- |
| --- | --- | --- | --- |
| L2(6) = | | | |

Before we put numbers in...let's get any old numbers out.

Even if your lists are empty, you will want to write this down, because you will use this later to clear your lists.

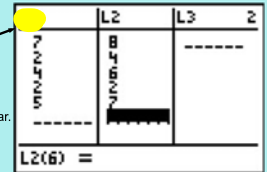
To Clear your lists to put new ones in....

Press **STAT** **ENTER**

use the up arrow until the cursor is on the L1

Press **CLEAR** then **ENTER** and the list should clear.

Do the same thing for the other lists that you want to clear.



| L1 | L2 | L3 | Z |
|---------|-----|-----|-----|
| 1 | 1 | --- | --- |
| 2 | 2 | --- | --- |
| 3 | 3 | --- | --- |
| 4 | 4 | --- | --- |
| 5 | 5 | --- | --- |
| 6 | 6 | --- | --- |
| 7 | 7 | --- | --- |
| 8 | 8 | --- | --- |
| 9 | 9 | --- | --- |
| 0 | 0 | --- | --- |
| --- | --- | --- | --- |
| L2(6) = | | | |

Now....Let's enter data.....

To input data into the **STAT list editor:**

- Enter STAT edit mode by pressing **[STAT] [1]**.
- Enter the data in the L1 and L2 lists, pressing **[ENTER]** after each entry.
- Press **[2nd] [MODE]** to QUIT and return to the home screen.

(7,8), (2,4), (4,6), (2,2), (5,7)

Please enter the DOMAIN into L1 and the RANGE into L2