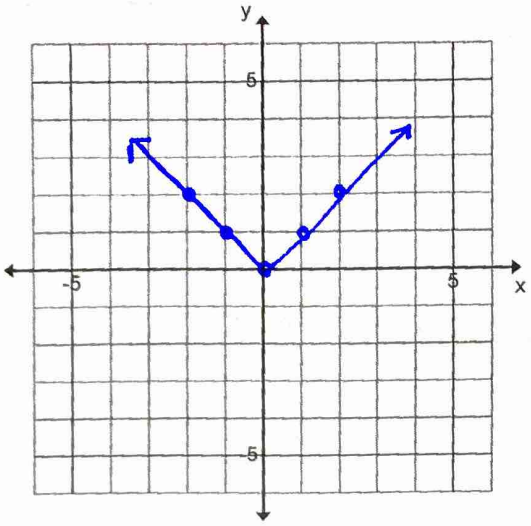
Ch 8: Transformations Notes & Examples Packet

Parent Functions:

$f(x) = |x|$

x	y
-2	2
-1	1
0	0
1	1
2	2

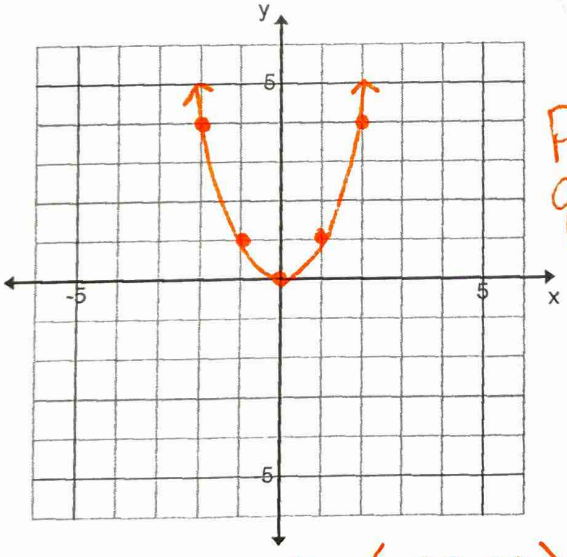
*everything positive



D: $(-\infty, \infty)$
R: $[0, \infty)$

$f(x) = x^2$

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



parabola
quadratic

D: $(-\infty, \infty)$
R: $[0, \infty)$

Definitions
Translation:

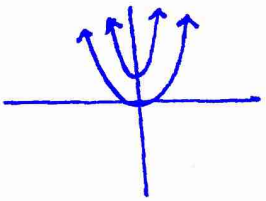
Reflection:

Transformation:

Given the following equations, graph the parent function and the new graph on desmos or a graphing calculator and write how the graphs have been translated.

1. $f(x)=x^2+2$

up 2



2. $f(x)=|x-2|$

right 2

3. $f(x)=|x+1|$

left 1

4. $f(x)=(x+3)^2$

left 3

For #5 & 6 use the same instructions as above but first predict what the translations will be. Were you correct?

5. $f(x)=(x+2)^2-3$

Prediction:

left 2
down 3

6. $f(x)=|x-5|+4$

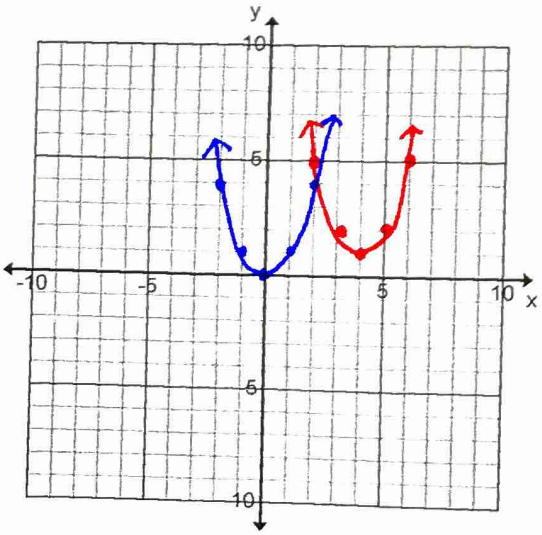
Prediction:

up 4
right 5

7. Can you come up with some general rules?

Now for #7-8 look at the function given, graph the parent function and graph the transformed graph without a calculator. You need to include the 5 points of the PF and at least 3 points for the new function.

7. $f(x)=(x-4)^2+1$ ← R4 ← U1



8. $f(x)=|x+3|+2$ ← L3 ← U2