Day 14
Notes

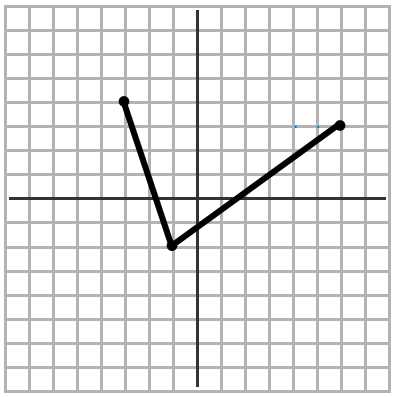
TRANSFORMATION NOTES DAY 3

Observe the absolute value function in vertex form: $y - k = a\,|\,x - h\,|$.

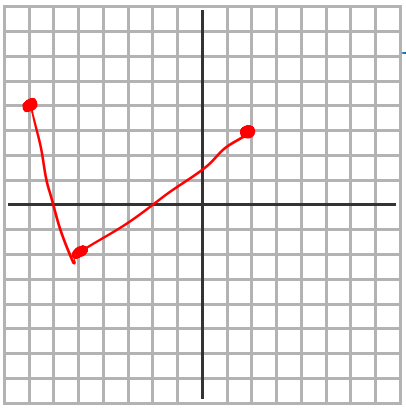
TRANSLATION RECAP:

- Which letter shifted the parabola/absolute value function horizontally? h
- Which letter shifted the parabola/absolute value function vertically? K
- Which letter turned the parabola/absolute value function upside down? a

Example One: Given f(x), graph f(x + 4)



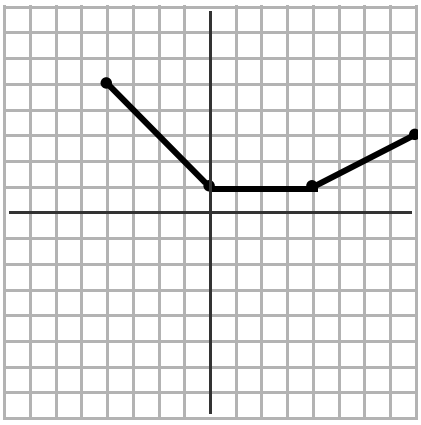
x	y
-3	4
-1	-2
6	3



subtract 4 from x

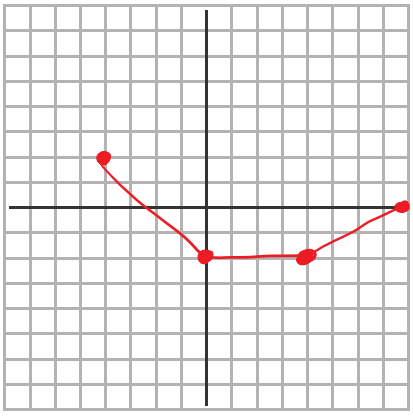
x	Δx	y
-3	-7	4
-1	-5	-2
6	2	3

Example Two: Given g(x), graph g(x) – 3 ← shifts "y" value by moving down 3

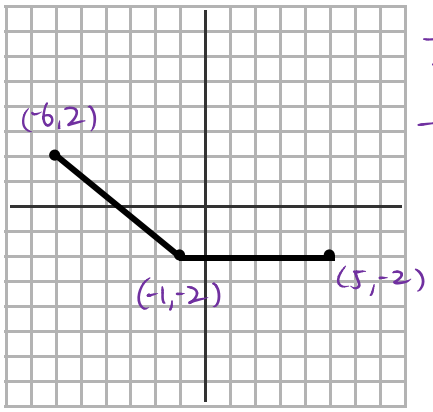


← subtract 3 from y

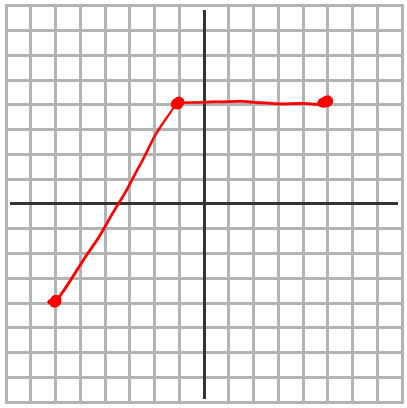
x	y	Δy
-4	5	2
0	1	-2
4	1	-2
8	3	0



Example Three: Given h(x), graph -2h(x) → stretches the "y" value

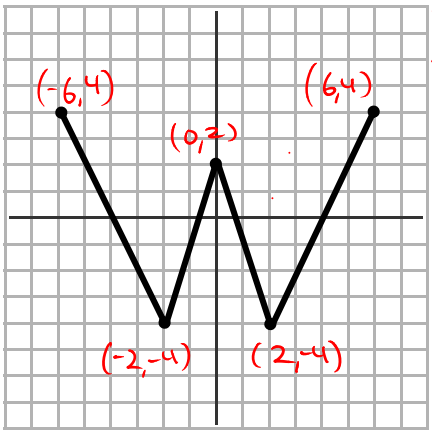


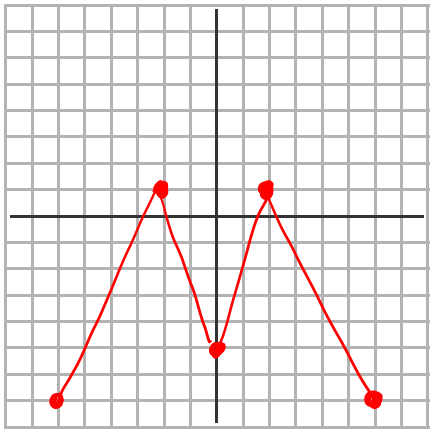
x	y	Δy
-6	2	-4
-1	-2	4
5	-2	4



Example Four: Given j(x), graph –j(x) – 3 ← reflect, shift down – affects the "y"

x	y	Δy₁ (-1)	Δy₂ (-3)
-6	4	-4	-7
-2	-4	4	1
0	2	-2	-5
2	-4	4	1
6	4	-4	-7





Example Five: Given k(x), graph -2k(x) + 3.

reflect/stretch, shift up 3. Affect y!

x	y	Δy (-2)	Δy (+3)
-2	4	-8	-5
0	-3	6	9
2	4	-8	-5