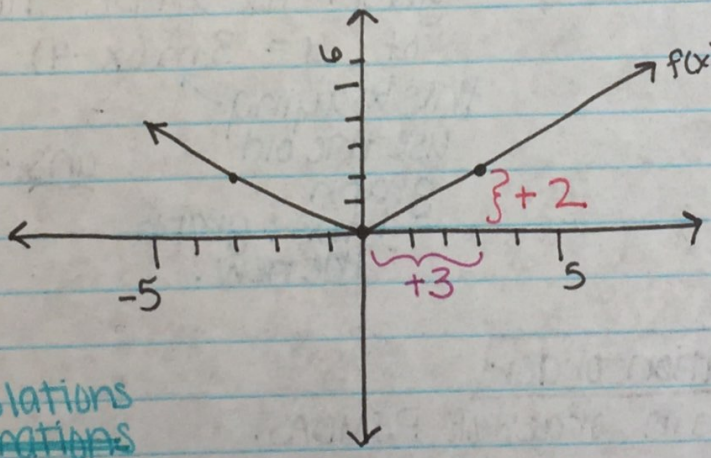
4.2 Quiz Notes

Please see parent functions & transformation notes

Solving for dilation

1st way
- look at the PF, usually after the vertex (x^2 & $|x|$) or the starting point ($\sqrt{x}$) the next point is up 1, over 1
→ if it isn't there's a dilation, the squares left or right counted is the horizontal, the squares up or down is vertical.

ex



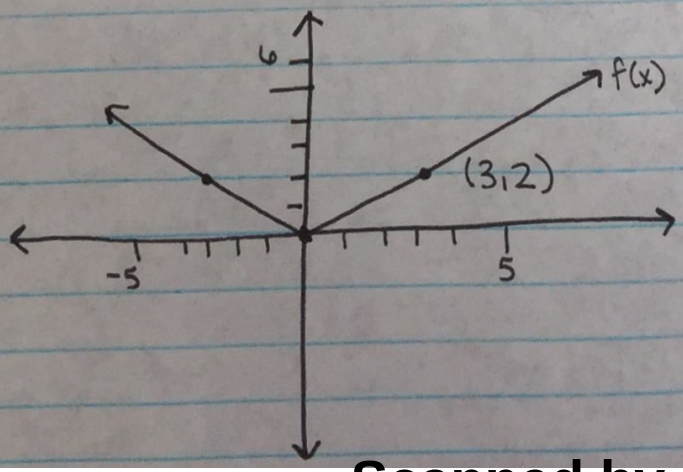
PF is $|x|$

$f(x) = 2\left|\frac{x}{3}\right|$

U/D count ↑ L/R count ↑

for both ways you ~~translations~~ ~~transformations~~ put in (L/R, U/D) and reflections 1st.

2nd way
- use a point to plug in & solve for a (not the vertex)



PF: $|x|$

$y = a|x|$

$2 = a|3|$

$2 = 3 \cdot a$

$\frac{2}{3} = a$

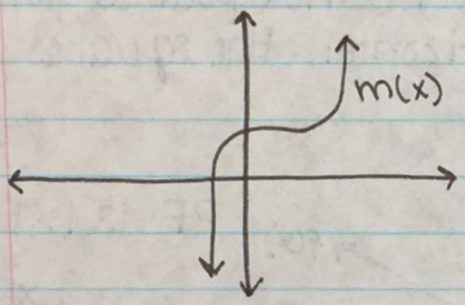
$f(x) = \frac{2}{3}|x|$

- vertex of a parabola is (h,k) where $y=(x-h)^2+k$
- common misconception

$\sqrt{(x-2)^2}=\sqrt{4}$ because $x-2=\pm 2$ solving for x.

$\sqrt{64}=8$ not ± 8.

note on notation



given the graph find the transformation of $y=3m(x-4)$

this is saying use the old graph $m(x)$ & graph the new.

ans: V. D. BA FO 3 R 4

transformation order

you do them in order of PEMDAS.