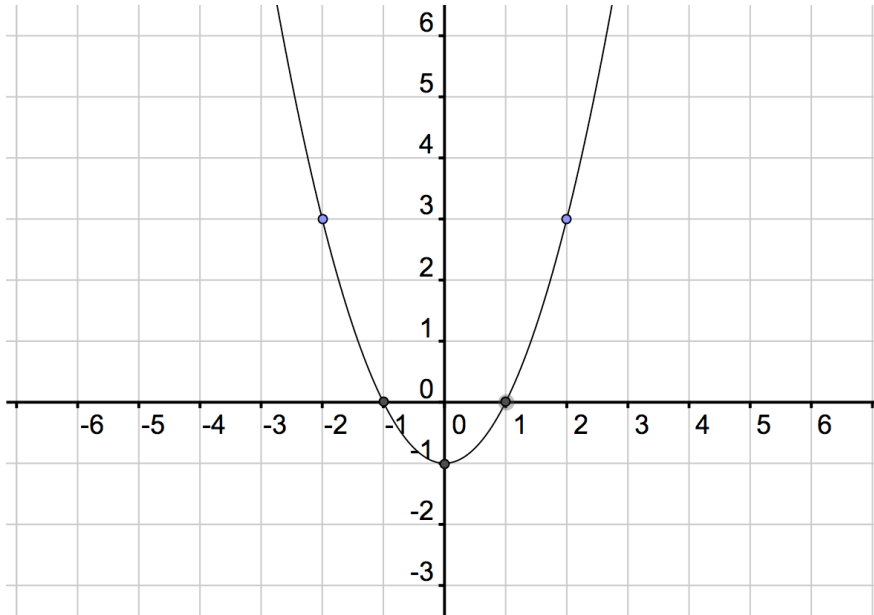


Is a vertical stretch the same thing as a horizontal squeeze? You might think that they are because they both make the graph look “skinnier.” But are they the same thing?

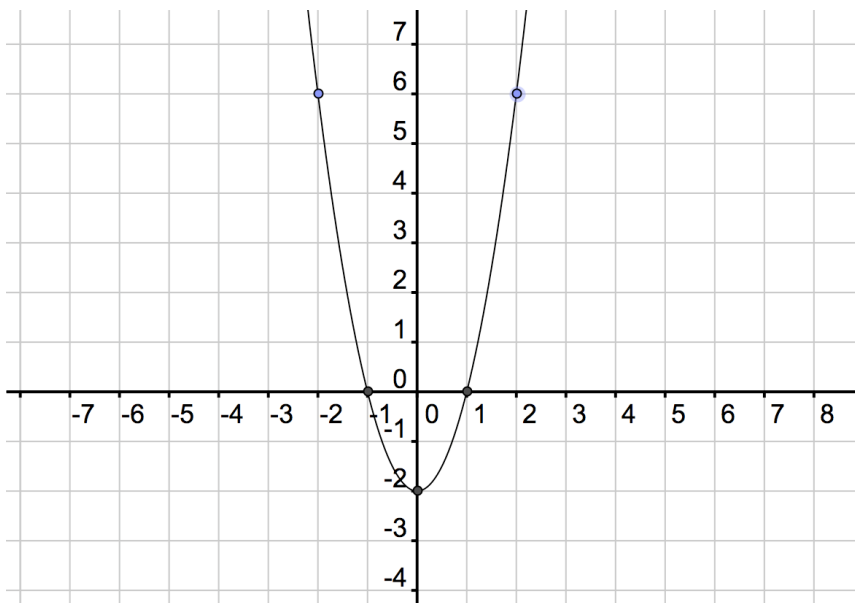
Compare the graphs of

$$f(x) = x^2 - 1,$$



x	y
0	-1
1	0
-1	0
2	3
-2	3

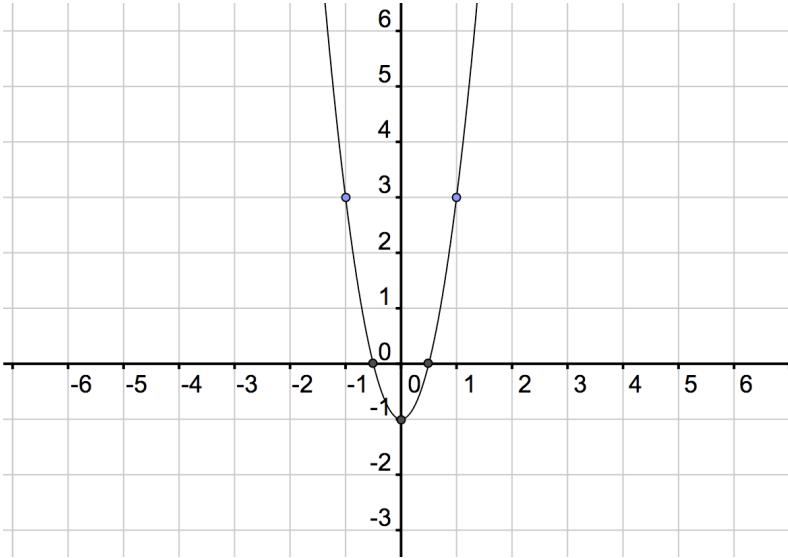
$$2f(x) = 2(x^2 - 1) = 2x^2 - 2,$$



x	y
0	-2
1	0
-1	0
2	6
-2	6

Notice that the x values stay the same and the y values change.

$$f(2x) = (2x)^2 - 1 = 4x^2 - 1.$$



X	Y
0	-1
.5	0
-.5	0
1	3
-1	3

Notice that the y values stay the same and the x values change.