

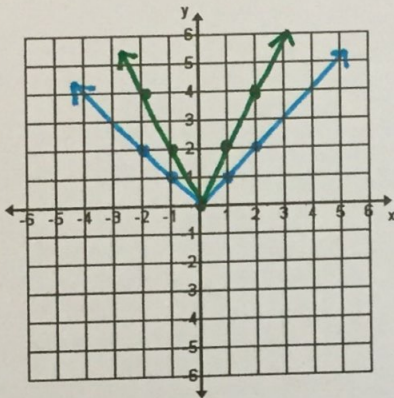
You will be graphing horizontal and vertical dilations of the function $y = |x|$. A dilation is just a fancy word for a **stretch**!

Use one of the following functions to fill in the missing equations below:

~~$f(x) = 2|x|$~~ $g(x) = |2x|$ $h(x) = \left|\frac{1}{2}x\right|$ ~~$j(x) = \frac{1}{2}|x|$~~ $k(x) = |x+2|$ ~~$n(x) = \left|\frac{1}{3}x\right|$~~

Graph the parent function (x, y) and dilation $(x, 2y)$.

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



Dilation:

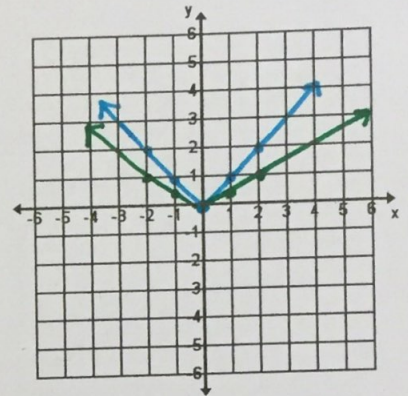
Vertical Stretch
by a factor of 2

Equation:

$f(x) = 2|x|$

Graph the parent function (x, y) and dilation $(x, \frac{1}{2}y)$.

Parent		
x	y	$\frac{1}{2}y$
-2	2	1
-1	1	$\frac{1}{2}$
0	0	0
1	1	$\frac{1}{2}$
2	2	1



Dilation:

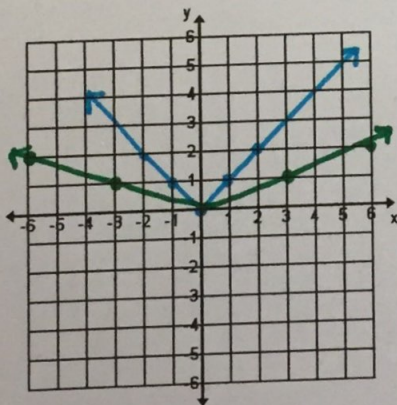
V.D.
BAFO $\frac{1}{2}$
wider

Equation:

$j(x) = \frac{1}{2}|x|$

Graph the parent function (x, y) and dilation $(3x, y)$.

Parent		
3x	x	y
-6	-2	2
-3	-1	1
0	0	0
3	1	1
6	2	2



Dilation:

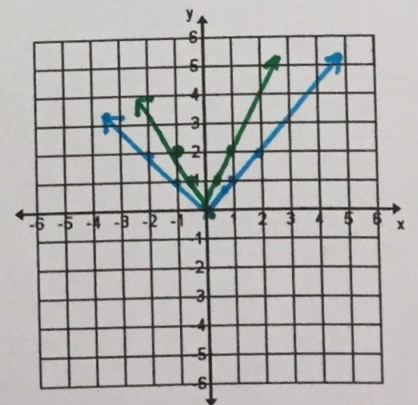
H.D.
BAFO $\frac{1}{3}$
wider

Equation:

$n(x) = \left|\frac{1}{3}x\right|$

Graph the parent function (x, y) and dilation $(\frac{1}{2}x, y)$.

Parent		
$\frac{1}{2}x$	x	y
-1	-2	2
$-\frac{1}{2}$	-1	1
0	0	0
$\frac{1}{2}$	1	1
1	2	2



Dilation:

H.D. BAFO
 $\frac{1}{2}$

Equation:

$g(x) = |2x|$