

2.4

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Objective: I can transform a point using function notation.

General form of a function with transformations:

*a+k are outside
() + go with y*

$$g(x) = a f(b(x-h)) + k$$

*b+h are inside
() with x
so b+h go with
x in table
+ do opp*

$$g(x) = f\left(-\frac{1}{2}(x+2)\right) - 1$$

*a=1 b=2 h=-2 k=-1
reflect*

Write transformations in words:

*reflect over y-axis, hor stretch of 2,
translate left 2, down 1*

Original
ordered pairs

1. (1, 0)
2. (-4, 5)
3. (-4, -5)
4. (1, 0)
5. $(-\frac{1}{2}, 1\frac{1}{2})$
6. (-4, -2)
7. (-4, 1)
8. (-2, 3)

Parent

x	g(x)
1	0
-4	5
-4	-5
1	0
$-\frac{1}{2}$	$1\frac{1}{2}$
-4	-2
-4	1
-2	3

Reflections

x	g(x)
-1	0
4	5
4	-5
-1	0
$\frac{1}{2}$	$1\frac{1}{2}$
4	-2
4	1
2	3

Stretches/
Compressions

2x	g(x)
-2	0
8	5
8	-5
-2	0
1	$1\frac{1}{2}$
8	-2
8	1
4	3

Translations
(Shifts)

x-2	g(x)-1
-4	-1
6	4
6	-6
-4	-1
-1	$1\frac{1}{2}$
6	-3
6	0
2	2

x+h y+k

graph

