

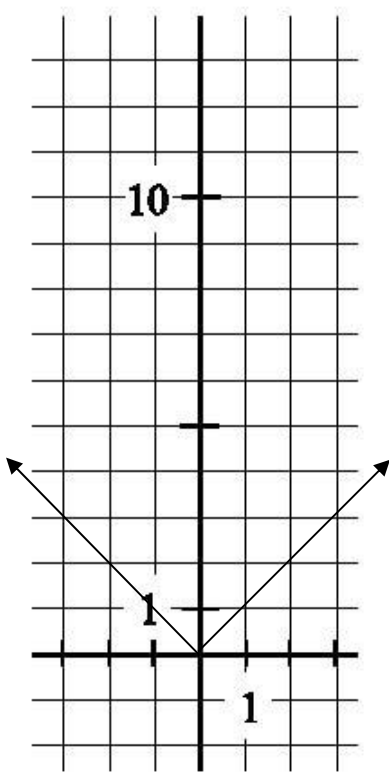
Transformations 2

NAME:

Use your knowledge about transformations to answer the following questions.

1. Notice $y = |x|$ is pictured below. Complete the table and draw in $y = 2|x|$.

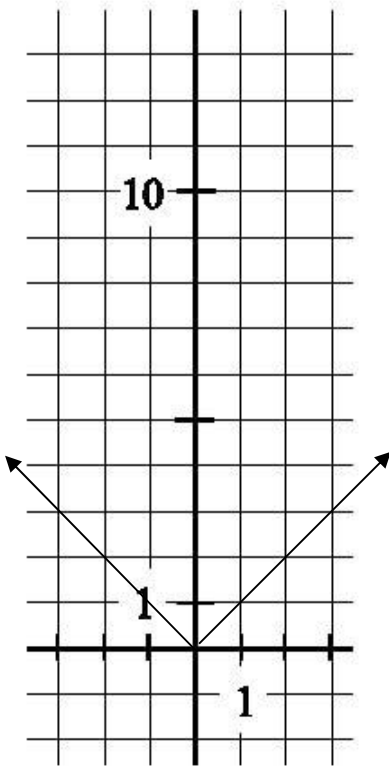
x	-3	-2	-1	0	1	2	3
$y = x $	3	2	1	0	1	2	3
$y = 2 x $							



Write down the full name of this transformation.

2. Notice again $y = |x|$ is pictured below. Complete the table and draw in $y = |x| + 5$.

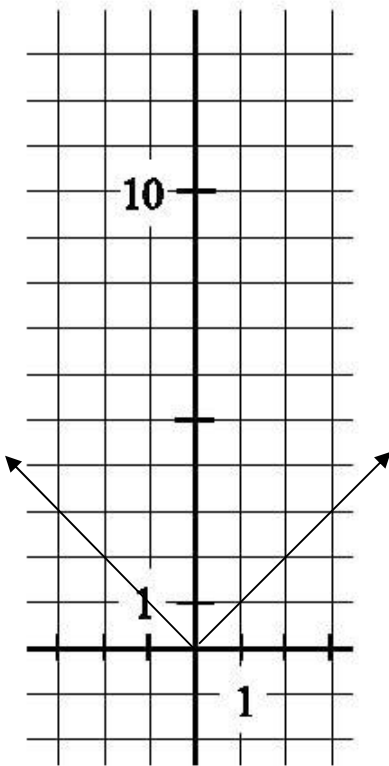
x	-3	-2	-1	0	1	2	3
$y = x $	3	2	1	0	1	2	3
$y = x + 5$							



Write down the full name of this transformation.

3. Notice again $y = |x|$ is pictured below. Complete the table and draw in $y = |x - 1|$.

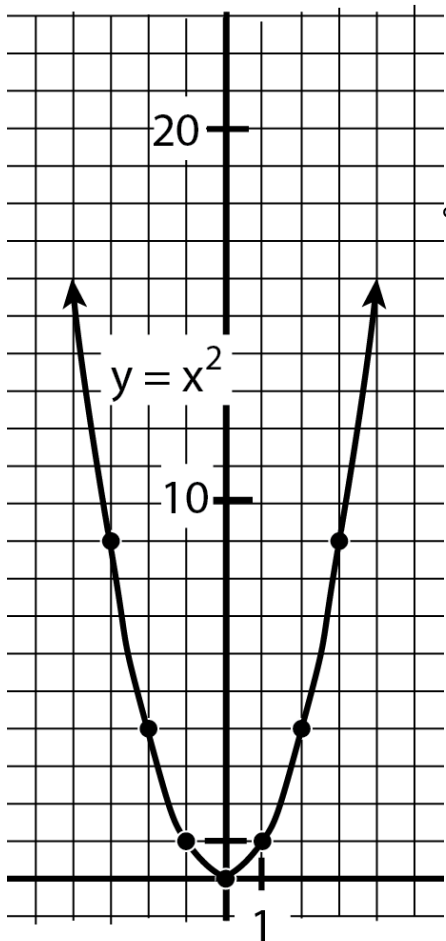
x	-3	-2	-1	0	1	2	3
$y = x $	3	2	1	0	1	2	3
$y = x - 1 $							



Write down the full name of this transformation.

4. We have seen individual transformations of functions. Let's look at a function whose graph is formed by more than one transformation. Consider $f(x) = x^2$ (graph below) and $g(x) = 2x^2 + 3$. Complete the table and graph $g(x) = 2x^2 + 3$ on the plane below. To help see the order of transformations, fill in the table for the intermediate transformation $y = 2x^2$ also (but do *not* graph it).

x	-3	-2	-1	0	1	2	3
$f(x) = x^2$	9	4	1	0	1	4	9
(intermediate transformation) $y = 2x^2$							
$g(x) = 2x^2 + 3$							



Do *not* graph $y = 2x^2$ to leave room for $g(x)$.

What are the **two** transformations needed to turn the graph of $f(x) = x^2$ into the graph of $g(x) = 2x^2 + 3$? (Do you see them in your graph?) Write the full names of the transformations in the **proper order**.