Algebra II Auch

Objectives

- Transform linear functions.
- Solve problems using linear transformations.

Example 1

- a) Let g(x) be the indicated transformation of f(x). Write the rule for g(x).
 - f(x) = 2x + 3; vertical translation 4 units up.

b) Let g(x) be the indicated transformation of f(x). Write the rule for g(x). Linear function defined in the table; reflection across y-axis.

х	-1	0	1
f(x)	0	2	4

Try it!

a) Let g(x) be the indicated transformation of f(x). Write the rule for g(x). f(x) = 3x + 1; translation 2 units right.

b) Let g(x) be the indicated transformation of f(x). Write the rule for g(x). Linear function defined in the table; reflection across x-axis.

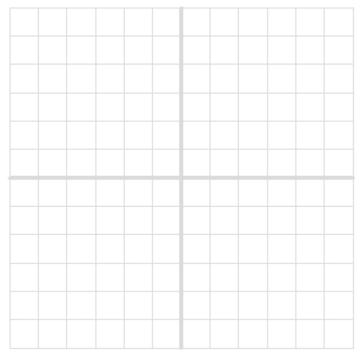
х	-1	0	1
у	1	2	3

Example 2

Stretching and compressing linear functions.

a) Let g(x) be a horizontal compression of f(x) = 2x - 1 by the factor of $\frac{1}{3}$. Write the rule for g(x),

and graph the function.



Try it!

Let g(x) be a vertical compression of f(x) = 3x + 2 by the factor of $\frac{1}{4}$. Write the rule for g(x),

Example 3

Let g(x) be a vertical shift of f(x) = x down 2 units followed by a vertical stretch by the factor of 5. Write the rule for g(x),

Try it!

Let g(x) be a vertical compression of f(x) = x by the factor of $\frac{1}{2}$ followed by a horizontal shift 8 units to the left. Write the rule for g(x).