



Linear Transformation Worksheet #2

Name _____ Date _____ Period _____

Use the given function to describe the listed transformations. Then, write the equation of the transformed function.

$$g(x) = -2x + 4$$

1. $\frac{1}{2}g(x)$

2. $g(x-5)$

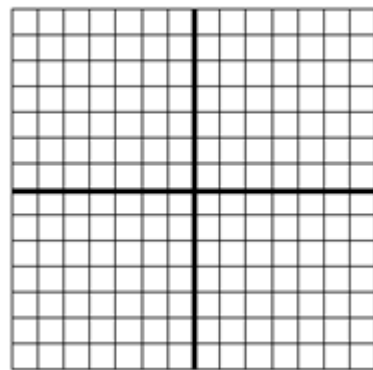
3. $3g(x) - 4$

4. $-g(x+3)$

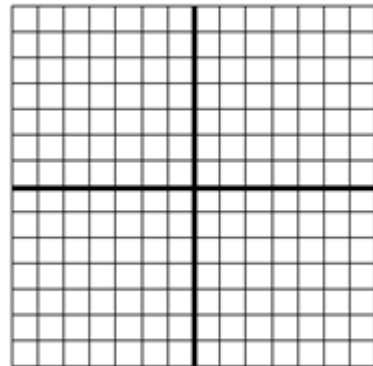
5. Joe the plumber charges \$40 for a visit and \$15 an hour. Write the function $f(x)$ with x being how many hours he worked.
6. Joe decides that he is going to increase his charge for a visit by \$20. Write the function $g(x)$ that shows the increase using the original function. What happened to the graph? What kind of transformation was it?
7. Going back to the original equation, Joe decides to increase his rate per hour by 50% leaving the visiting charge the same. Write $h(x)$ using the original function. What kind of transformation was it?
8. Going back to the original plan, Joe decides to double his hourly rate and decrease his visit cost to \$25. Write the function $j(x)$ using the original function. What kind of transformation was it?

9. Fishermen in the Finger Lakes Region have been recording the dead fish they encounter while fishing in the region. The Department of Environmental Conservation monitors the pollution index for the Finger Lakes Region. The model for the number of fish deaths "y" for a given pollution index "x" is $y = 9.607x + 111.958$. What is the meaning of the slope? What is the meaning of the y-intercept?

10. $f(x) = -2x + 6$
Translate the graph 3 down and then 4 to the left.
Write the transformed function in terms of $g(x)$ and then graph both on the right.



11. $f(x) = -4x - 2$
Translate the graph up 2 and reflect over the x-axis.
Write the transformed function in terms of $g(x)$ and then graph both on the right.



12. $f(x) = 3x$
Translate the graph 3 up and a vertical stretch of 2.
Write the transformed function in terms of $g(x)$ and then graph both on the right.

