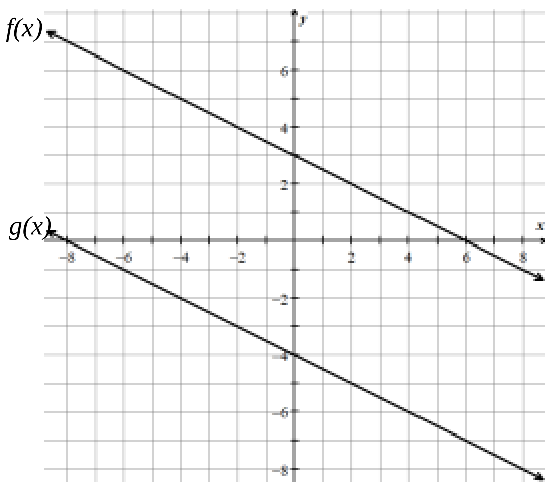
Transformation of Functions

If you add a number to or subtract a number from an entire function, it causes a ______________ ___________________ of the original function. Given some function *f(x)*, *g(x) = f(x) + k* is known as the _____________________ form of *g(x)*. The constant *k* is not grouped with *x*, so *k* affects the _____________, or ______________, of the original function. If the value of $k < 0$, the graph of *g(x)* would be the same as the graph of *f(x)*, just_______________________ *k* units. If the value of $k > 0$, the graph of *g(x)* would be the same as the graph of *f(x)*, just _____________________ *k* units.

Examples:

1. Use the given form to write the equation for g(x) in translation and slope-intercept form.

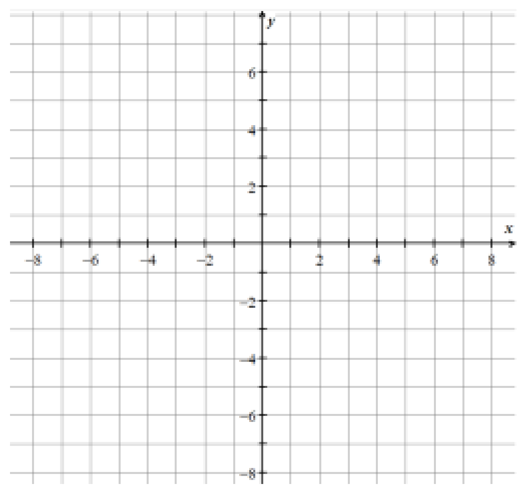
$$f(x) = -\frac{1}{2}x + 3$$



Translation form: _______________________

Slope-Intercept form: ____________________

2. Graph the functions, if $f(x) = 3(x + 1) - 5$ and $g(x) = f(x) + 4$. Then simplify $g(x)$ into slope intercept form.



Slope-Intercept form: ____________________

3. If $f(x) = 2(3)^{x-2}$ and $g(x) = f(x) - 5$.

then $g(x) =$________________________.

3. If $h(x) = 4x + 5$ and $k(x) = h(x) - 3$.

then $k(x) =$________________________.