Exercise 14

For the following exercises, use each pair of functions to find $f(g(x))$ and $g(f(x))$. Simplify your answers.

$$f(x) = |x|, \quad g(x) = 5x + 1$$

Solution

Compute $f(g(x))$ by plugging the formula for $g(x)$ where x is in the formula for $f(x)$.

$$f(g(x)) = |5x + 1|$$

Compute $g(f(x))$ by plugging the formula for $f(x)$ where x is in the formula for $g(x)$.

$$g(f(x)) = 5|x| + 1$$