

Exercise 79

For the following exercises, use the functions $f(x) = 2x^2 + 1$ and $g(x) = 3x + 5$ to evaluate or find the composite function as indicated.

$$(g \circ g)(x)$$

Solution

Plug the formula for $g(x)$ where x is in the formula for $g(x)$ and expand the result.

$$\begin{aligned}(g \circ g)(x) &= g(g(x)) \\ &= 3(3x + 5) + 5 \\ &= 9x + 15 + 5 \\ &= 9x + 20\end{aligned}$$