

Exercise 73

For the following exercises, use each pair of functions to find $f(g(0))$ and $g(f(0))$.

$$f(x) = 5x + 7, \quad g(x) = 4 - 2x^2$$

Solution

To find $f(g(0))$, evaluate $g(0)$ first: $g(0) = 4 - 2(0)^2 = 4$. Therefore,

$$f(g(0)) = f(4) = 5(4) + 7 = 20 + 7 = 27.$$

To find $g(f(0))$, evaluate $f(0)$ first: $f(0) = 5(0) + 7 = 7$. Therefore,

$$g(f(0)) = g(7) = 4 - 2(7)^2 = 4 - 2(49) = -94.$$