

Exercise 72

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

$$f(x) = 4x + 8, \quad g(x) = 7 - x^2$$

Solution

To find $f(g(0))$, evaluate $g(0)$ first: $g(0) = 7 - 0^2 = 7$. Therefore,

$$f(g(0)) = f(7) = 4(7) + 8 = 28 + 8 = 36.$$

To find $g(f(0))$, evaluate $f(0)$ first: $f(0) = 4(0) + 8 = 8$. Therefore,

$$g(f(0)) = g(8) = 7 - 8^2 = 7 - 64 = -57.$$