Exercise 51

For the following exercises, given each function f, evaluate $f(-1)$, $f(0)$, $f(2)$, and $f(4)$.

$$f(x) = \begin{cases} 5x & \text{if } x < 0 \\ 3 & \text{if } 0 \leq x \leq 3 \\ x^2 & \text{if } x > 3 \end{cases}$$

Solution

Since $-1 < 0$,

$$f(-1) = 5(-1) = -5.$$

Since $0 \leq 0 \leq 3$,

$$f(0) = 3.$$

Since $0 \leq 2 \leq 3$,

$$f(2) = 3.$$

Since $4 > 3$,

$$f(4) = (4)^2 = 16.$$