Exercise 46

For the following exercises, given each function f, evaluate $f(-3)$, $f(-2)$, $f(-1)$, and $f(0)$.

$$f(x) = \begin{cases} x + 1 & \text{if } x < -2 \\ -2x - 3 & \text{if } x \geq -2 \end{cases}$$

Solution

Since $-3 < -2$,

$$f(-3) = (-3) + 1 = -2.$$

Since $-2 \geq -2$,

$$f(-2) = -2(-2) - 3 = 4 - 3 = 1.$$

Since $-1 \geq -2$,

$$f(-1) = -2(-1) - 3 = 2 - 3 = -1.$$

Since $0 \geq -2$,

$$f(0) = -2(0) - 3 = 0 - 3 = -3.$$