Exercise 20

For the following exercises, determine the interval(s) on which the function is increasing and decreasing.

$$f(x) = 4(x+1)^2 - 5$$

Solution

$y = f(x)$ is the graph of a parabola that's shifted to the left by one unit and shifted down by 5 units. The axis of symmetry is $x + 1 = 0$, or $x = -1$, so the function increases on $(-1, \infty)$ and decreases on $(-\infty, -1)$.