6.022x10^{22} times 10

Exercise 7: Fixed-point iteration

+/ eeeeeeee mmmmmmmmm
+ 011 0101 (1.0101 2^3)
minus 1: + 011 and 1.0101 => 0.0101 => 1.01 &
subtract 2 from the exponent

Consider the iteration

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

Does this function have a fixed point, $x_0 \equiv f(x_0)$, or is there a cycle $x_1 = f(x_0)$, $x_0 \equiv x_2 = f(x_1)$ et cetera?

Now code this function and see what happens with various starting points x_0. Can you explain this?