Even digits

Round A, Kick start 2018

Idea:

Find a number $\geq N$ (num1) and satisfying the requirement.

Find a number $< N$ (num2) and satisfying the requirement.

If num1 - N ≤ N - num2:
    return num1 - N
else:
    return N - num2

Example:

2018

① 2020

② 2008

88988

① → 88088 + 2 = 88088 + 2 = 20000

Algorithm

① How to find num1:

a) from left to right, find the first digit which is not even.

b) If that digit ≠ 9, add one to that digit, and change all digits after that to 0.

c) If that digit = 9, find the nearest digit before it which is not 8 (if all digits before it are 8, create a digit 1 in the front) add two to that digit, set every digit after 1 to 0.

② How to find num2:

a) from left to right, find the first digit which is not even.

b) set that digit to digit -1, set every digit after 1 to 8.

Code: ipad-1.cpp