

D. Finals in arithmetic

time limit per test: 2 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

Vitya is studying in the third grade. During the last math lesson all the pupils wrote on arithmetic quiz. Vitya is a clever boy, so he managed to finish all the tasks pretty fast and Oksana Fillipovna gave him a new one, that is much harder.

Let's denote a *flip operation* of an integer as follows: number is considered in decimal notation and then reverted. If there are any leading zeroes afterwards, they are thrown away. For example, if we flip 123 the result is the integer 321, but flipping 130 we obtain 31, and by flipping 31 we come to 13.

Oksana Fillipovna picked some number a without leading zeroes, and flipped it to get number a_r . Then she summed a and a_r , and told Vitya the resulting value n . His goal is to find any valid a .

As Oksana Fillipovna picked some small integers as a and a_r , Vitya managed to find the answer pretty fast and became interested in finding some general algorithm to deal with this problem. Now, he wants you to write the program that for given n finds any a without leading zeroes, such that $a + a_r = n$ or determine that such a doesn't exist.

Input

The first line of the input contains a single integer n ($1 \leq n \leq 10^{100\,000}$).

Output

If there is no such positive integer a without leading zeroes that $a + a_r = n$ then print 0. Otherwise, print any valid a . If there are many possible answers, you are allowed to pick any.

Examples

input
4
output
2
input
11
output
10
input
5
output
0
input
33
output
21

Note

In the first sample $4 = 2 + 2$, $a = 2$ is the only possibility.

In the second sample $11 = 10 + 1$, $a = 10$ — the only valid solution. Note, that $a = 01$ is incorrect, because a can't have leading zeroes.

It's easy to check that there is no suitable a in the third sample.

In the fourth sample $33 = 30 + 3 = 12 + 21$, so there are three possibilities for a : $a = 30$, $a = 12$, $a = 21$. Any of these is considered to be correct answer.