Problem J. $X + R(X) = N$

Input file:	xrevx.in
Output file:	xrevx.out
Time limit:	2 seconds
Memory limit:	256 megabytes

Ruslan is crazy about counting numbers and solving problems. His favourite pastime is to make up a problem and solve it by himself. Some time ago he heard about a very interesting problem: given the positive integer N, you have to say whether such X that $X + R(X) = N$ exists or not, where X is a positive integer, and $R(X)$ is the number X written backwards. Then, Ruslan has decided that this task is elementary, so he didn't start solving it, but made up a more difficult problem instead.

You are given the positive integer number N. How many positive integer numbers X are there, that $X + R(X) = N$?

$R(X)$ is the number X written backwards. For example:

$$R(123) = 321$$

$$R(150) = 51$$

Input

Input will consist of multiple test cases. Each case will be a single line containing number N $(1 \leqslant N < 10^{10\,000})$. A line with a single zero terminates the input.

Maximum size of input file is $200\,000$ bytes.

Output

Output for each test case should consist of a single integer on a line, indicating the number of numbers X satisfying the condition. Do not output leading zeros.

Example

xrevx.in
1
2
11
13
14003
767513456469789456166547987979741366664879441
0

xrevx.out
0
1
1
0
60
0