# 8121   Spinning Up Palindromes

"Sabotage!", exclaimed J. R. Diddly, president and founder of Diddly Widgets Inc.

"Vandalism, perhaps. Nothing's actually been damaged." responded Robert Lackey, the chief accountant.

Both were staring up at the large counter suspended above the factory floor, a counter that had faithfully recorded the number of widgets that had come off the assembly line since the factory was opened. But someone had changed the number being displayed so that it formed...
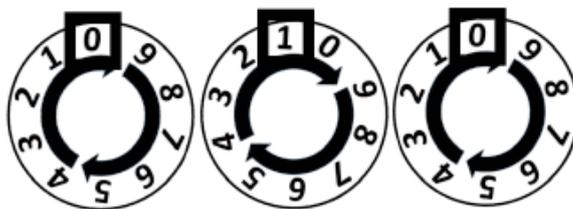
"It's a palindrome." said Lackey. "It reads the same forwards as backwards."

"What I don't understand," said Diddly, "is why our security guards didn't catch the vandals during their regular sweeps. It must have taken them hours to click forward to this new number, one step at a time."

"No." replied Lackey. "Although we only advance the rightmost digit each time a new widget is built, it's possible to spin any of the digits. With a little planning, this might have taken only a few seconds."

Consider a digital counter consisting of k wheels, each showing a digit from 0 to 9. Each wheel is mounted so that it can advance to the next digit in a single step, e.g., from 3 to 4, or from 8 to 9.

It is also possible to advance from digit 9 to digit 0. However, when this happens, the wheel on its immediate left will also advance to the next digit automatically. This can have a cascade effect on multiple wheels to the left, but they all happen in a single step.

Given the current setting of the counter, find the smallest number of steps until one can reach a palindrome. The palindrome must respect leading zeros, e.g., 0011 is not a palindrome.

For example, for input 610, it takes four steps. This can be done by incrementing the 6 wheel four times, resulting in 010.

Input

The input file contains several test cases, each of them as described below.

The first line of input contains a string of k digits ($1 \le k \le 40$), representing the current setting of the counter.

Note that the input may contain leading zeros.

Output

For each test case, print, on a single line, the minimum number of wheel advances necessary to produce a palindrome.

Sample Input

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0
009990001
29998
610
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981
908419470094090379719171824780119701 9268

Sample Output

0
3
5
4
2
54