Ones

Time limit: 1 sec

Prof. Chin wants to represent positive integer n as a sum of *addends*, where each addends is an integer number (maybe negative) containing only 1s. For example, he can represent 121 as 121=111 + 11 + –1.

A number may be represented in several ways. For example, 9 can be represented as 11 + -1 + -1 or 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1. Prof. Chin want to find the sum has the least number of digits 1.

Input

The first line of the input contains integer n ($1 \le n < 10^9$).

Output

Print expected minimal number of digits 1.

Examples

Input	Output
121	6
11	2
1	1
2	2
5	5
6	6
7	6
30	9

Hint:

1. When n <= 11, the solution should be calculated trivially. When n > 11, the solution should be calculated recursively.
2. Let q_1=1, q_2=11, q_3=111, q_4=1111 ....
   For any integer n, Let q_k be the largest number such that q_{k-1} <= |n|.
   We know that the sum that has the least number of 1s has q_k either floor(|n|/q_k) or floor(|n|/q_k)+1 times.