

Ones

Time limit: 1 sec

Prof. Chin wants to represent positive integer n as a sum of *addends*, where each addend 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 ($1 \leq n < 10^9$).

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