

Problem I. Number Theory

Input file: *standard input*
Output file: *standard output*
Time limit: 7 seconds
Memory limit: 512 mebibytes

Let $o_i = \underbrace{1 \dots 1}_{i \text{ times}}$ be the number which consists of i ones in its decimal representation.

Bobo has an integer n . Find a sequence of possibly negative integers (x_1, x_2, \dots) where

- $\sum_{i=1}^{\infty} o_i \cdot x_i = n$,
- $\sum_{i=1}^{\infty} i \cdot |x_i|$ is minimized.

Input

The input consists of several test cases terminated by end-of-file. For each test case, The first line contains an integer n .

- $1 \leq n < 10^{5000}$
- In each input, the sum of the number of decimal digits of n does not exceed 50000.

Output

For each test case, output an integer which denotes the minimum value of $\sum_{i=1}^{\infty} i \cdot |x_i|$.

Examples

standard input	standard output
12	3
100	5
998244353	76

Note

For the first test case, $x_1 = x_2 = 1$, $x_3 = x_4 = \dots = 0$. The minimum value is $1 \times 1 + 2 \times 1 = 3$.

For the second test case, $x_1 = 0$, $x_2 = -1$, $x_3 = 1$, $x_4 = x_5 = \dots = 0$. The minimum value is $2 \times 1 + 3 \times 1 = 5$.