I. Number Theory

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

Bobo has an integer n. Find a sequence of possibly negative integers $(x_1, x_2, \ldots,)$ 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 $\sum_{i=1}^{\infty} i \cdot |x_i|$.

Sample Input

```
12
100
998244353
```

Sample Output

```
3
5
76
```

Note

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

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