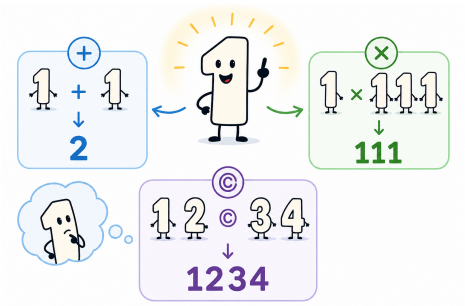
1's For All

Time Limit: 10 s | Memory Limit: 512 MiB

The *complexity* of an integer is the minimum number of 1's needed to represent it using only addition, multiplication and parentheses. For example, the complexity of 2 is 2 (writing 2 as $1 + 1$) and the complexity of 12 is 7 (writing 12 as $(1 + 1 + 1) \times (1 + 1 + 1 + 1)$).

To make the problem more interesting and more efficient, we'll add a new operation called Number Zipping via Piecewise Concatenation (NZPC). This operation (which we'll represent using ©) takes two integers and "glues" them together, so $12 \copyright 34$ becomes the four digit number 1234. Using this operation, the complexity of 12 is now 3 (writing it either as $(1 \copyright 1) + 1$ or $1 \copyright (1 + 1)$). Note that for the NZPC operation you may not treat numbers as having leading zeros at all: $1 \copyright 01$ does not result in 101 but results in 11.

The goal is to find the minimum number of 1's needed to represent the given integer using the revised definition.



Input

Each test case consists of a single line containing an integer n, where $1 < n \leq 10^5$.

Output

Output the complexity of the number, using the revised definition above.

Sample Input 1	Sample Output 1
2	2

Sample Input 2	Sample Output 2
12	3

Sample Input 3	Sample Output 3
100000	12

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