

Number Reduction

Input file: **standard input**
Output file: **standard output**
Time limit: 2 seconds
Memory limit: 256 megabytes

Busy Beaver is given a positive integer k ($1 \leq k \leq 10^{18}$) written in base 10. Then, he repeatedly performs the following operation:

Choose a digit in k that is greater than 1. If k is divisible by that digit, divide k by that digit. Repeat this process on the resulting number until either 1 is reached or there are no more legal operations. Call k *valid* if there exists a way to reduce it to 1 via this operation.

Compute the number of k in the range $1, \dots, N$ that are valid.

Input

The first line of input contains the given integer N ($1 \leq N \leq 10^{18}$).

Output

Output a single line, with a single integer equivalent to the number of integers from 1 to N that have a way to reach 1 using the operation.

Scoring

There are two subtasks for this problem.

- (25 Points): $N \leq 10^5$.
- (75 Points): No additional constraints.

Examples

standard input	standard output
9	9
13	10

Note

In the first test case, all integers from 1 to 9 can be divided by themselves to reach 1, so the answer is 9.

In the second test case, all integers from 1 to 9 are valid, as mentioned in the first test case. 10, 11, and 13 have no digits greater than 1 that are divisors of themselves, and therefore cannot be reduced to 1. However, 12 can be divided by 2 to get 6, which can in turn be divided by 6 to get 1. Therefore, the numbers 1 through 9 and 12 are valid, giving an answer of 10.