Do you know Factorials

Factorial of a number *N* can be defined as: *N! = 1 * 2 * 3 * 4 * ..... * (N-1) * N.*
Also 0! = 1.

As this could be large number, So we don't want you to calculate it. Instead you are given factorial of a number and you have to predict the number.

Input

The first line of input contain *n!*.

Constraints

- $2 \leq n!$
- $1 \leq d \leq 10^6$ (d is total number of digits in the *n!*)

Output

For each given *n!* print value of n.

Example

Input:
24
Output:
4

Input:
51090942171709440000
Output:
21

Input:
10888869450418352160768000000
Output:
27