## Problem F

## Factorial

The factorial of a positive integer number $N$, denoted as $N!$, is defined as the product of all positive integer numbers smaller or equal to $N$. For example $4!=4 \times 3 \times 2 \times 1=24$.

Given a positive integer number $N$, you have to write a program to determine the smallest number $k$ so that $N=a_{1}!+a_{2}!+\ldots+a_{k}!$, where every $a_{i}$, for $1 \leq i \leq k$, is a positive integer number.

## Input

The input consists of several test cases. A test case is composed of a single line, containing one integer number $N\left(1 \leq N \leq 10^{5}\right)$.

## Output

For each test case in the output your program must output the smallest quantity of factorial numbers whose sum is equal to $N$.

## Examples

| Input | Output |
| :--- | :--- |
| 10 | 3 |
| 25 | 2 |

