## 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  $1 \le i \le k$ , 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 ( $1 \le N \le 10^5$ ).

## 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