Alien Numbers

Input file:	`standard input`
Output file:	`standard output`
Time limit:	10 seconds
Memory limit:	256 megabytes

The Froogons have made contact with Earth! Their advanced technology has made communication easy, except for their weird number system. They use factorials. N factorial, written as $N!$, is equal to $1 \times 2 \times 3 \times \cdots \times N$. For example, $3! = 1 \times 2 \times 3 = 6$ and $1! = 1$.

The Froogons write a number as a sequence where the first number from the left indicates the number of 1!s, the second number from the left indicates the number of 2!s, the third number indicates the number of 3!s, etc, The i-th number in the sequence is at most i and represents how many i!s are included in the number. For example, the 3rd number in the sequence is at most 3 and represents how many 3!s are included in the number.

Write a program that asks for a decimal number as input and outputs its Froogon representation.

Input

A single positive integer N, in decimal notation.

Output

Output N space-seperated integers - N written in Froogon notation. Your answer should be on a single line with a single space separating adjacent numbers in the sequence. Leading zeros must be shown.

Examples

standard input	standard output
13	1 0 2
17	1 2 2
24	0 0 0 1

Note

In Froogon, 13 is written as `1 0 2` (i.e. $1 \times 1! + 0 \times 2! + 2 \times 3!$).

In Froogon, 17 is written as `1 2 2` (i.e. $1 \times 1! + 2 \times 2! + 2 \times 3!$).

In Froogon, 24 is written as `0 0 0 1` (i.e. $0 \times 1! + 0 \times 2! + 0 \times 3! + 1 \times 4!$).