F. Prime factorization

time limit per test: 2 seconds
memory limit per test: 64 megabytes
input: standard input
output: standard output

You are given an integer n. Output its prime factorization.

If $n = a_1^{b_1} a_2^{b_2} \ldots a_k^{b_k}$, where a_k are prime numbers, the output of your program should look as follows: $a_1\ a_1\ \ldots\ a_1\ a_2\ a_2\ \ldots\ a_2\ \ldots\ a_k\ a_k\ \ldots\ a_k$, where factors are ordered in non-decreasing order, and each factor a_i is printed b_i times.

Input

The only line of input contains an integer n $(2 \le n \le 250)$.

Output

Output the prime factorization of n, as described above.

Examples

input
245
output
5 7 7

input
13
output
13