E. Prime Segment

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

Positive integer number x is called prime, if it has exactly two positive integer divisors. For example, 2, 3, 17, 97 are primes, but 1, 10, 120 are not.

You are given an integer number n, find the shortest segment $[a, b]$, which contains n (i.e. $a \le n \le b$) and a, b are primes.

Input

The only given line contains an integer number n ($2 \le n \le 10000$).

Output

Print the space separated pair of the required numbers a, b.

Examples

input
10
output
7 11

input
97
output
97 97