Exponentially Fun Problem

Problem ID: exponentiallyfun

In your spare time, you've been at ETA building a machine with a function $S(X) = N$ that given a number X outputs a number N, where N is the sum of the prime factors of X counted with multiplicity. For example, $S(12) = S(2 \cdot 2 \cdot 3) = 2 + 2 + 3 = 7$. Your friend Mateusz wants to try your new machine. He gave the machine a number X but you now only see the number N on the display of the machine. What is the *smallest* and *biggest* number X that Mateusz could have given your machine, modulo $10^9 + 7$?

Input

Input consists of only one integer $2 \leq N \leq 30000$.

Output

Output two space-separated integers, the smallest possible X that Mateusz could have given your machine, and the biggest possible X, modulo $10^9 + 7$.

Sample Input 1	Sample Output 1
7	7 12