Problem NOTSUBSEQ: Not a subsequence

In this problem we consider strings over a fixed finite alphabet of size k. The alphabet contains the first k characters from the list

$$a, b, c, \ldots, z, A, B, C, \ldots, Z, 0, 1, \ldots, 9.$$

For every test case, we are given the value of k (notice that it cannot exceed 62), and consider only strings consisting of the first k characters from the list.

Given a string $s[1..n]$, we are interested in strings which are **not** its subsequences. Formally, a string $t[1..m]$ is a subsequence of a string $s[1..n]$ when one can choose **not necessarily contiguous** indices $1 \leq i_1 < i_2 < \ldots i_m \leq n$ such that $t[1] = s[i_1]$, $t[2] = s[i_2]$, ..., $t[m] = t[i_m]$. For example, acb is a subsequence of $babcaab$. Now, given a string $s[1..n]$, we would like to compute the smallest m such that there is a string $t[1..m]$, which is **not** a subsequence of $s[1..n]$. Additionally, we would like to count the number of such shortest strings $t[1..m]$. As the latter number can be quite large, output it modulo $10^9 + 7$.

Input

The input starts with the number of test cases $T \leq 100$. Then the descriptions of T test cases follow. A single test case consists of a single line containing the size of the alphabet k ($k \in [1, 62]$) and the string $s[1..n]$ ($n \in [1, 10^6]$). The string consists of the first k characters from a–zA–$Z0$–9.

Output

For every test case output one line containing two numbers. The first number is the smallest m such that there is a string $t[1..m]$ consisting of the first k characters from a–zA–$Z0$–9, which is **not** a subsequence of $s[1..n]$. The second number is the total count of such shortest strings $t[1..m]$ modulo $10^9 + 7$.

Sample Input 1

```
3
2 abba
62 0123456789
3 aabbcbbcbabcbab
```

Sample Output 1

```
3 5
1 52
4 7
```