

CCC '03 S4 - Substrings

2003 Canadian Computing Competition, Stage 1, Senior #4

How many distinct substrings does a given string S have?

For example, if $S = \text{"abc"}$, S has 7 distinct substrings: "", "a", "b", "c", "ab", "bc", "abc". Note that the empty string and S itself are considered substrings of S .

On the other hand, if $S = \text{"aaa"}$, S has only 4 distinct substrings: "", "a", "aa", "aaa".

Input Specification

The first line of the input file contains N , the number of test cases. For each test case, a line follows giving S , a string of from 1 to 5000 alphanumeric characters.

Output Specification

Your output consists of one line per case, giving the number of distinct substrings of S .

Grading

50% of test cases will have l (the length of the string) where $l \leq 1000$. For all cases, $l \leq 5000$.

Sample Input

```
2
abc
aaa
```

Output for Sample Input

```
7
4
```