CCC '03 S4 - Substrings

Time limit: 1.0s **Memory limit:** 256M

Canadian Computing Competition: 2003 Stage 1, Senior #4

How many distinct substrings does a given string S have?

For example, if $S =$ `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 $S =$ `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
```