# 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 $S$ = "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
```