

Problem NOTTOOBAD: Nottobad Presses

Company Macrohard has released its new version of editor Nottoobad, which can understand a few voice commands. Unfortunately, there are only two voice commands that it can understand "repeat the last word" and "delete the last symbol". However, when one uses "repeat the last word" the editor inserts a blank that separates the words. But the company claims that it is possible to type much faster simply by less number of presses. For example, such a phrase like "this thin thing" requires only 6 presses of the keyboard:

Type "This", say "repeat the last word", say "delete the last symbol", type "n", say "repeat the last word" and type "g".

In order to increase the popularity of its product the company decided to organize a contest where the winner will be a person who types a given number of words with minimum number of presses. Moreover, the first word must be typed first, and all the others can be typed in arbitrary order. So, if words "apple", "plum" and "apricote" must be typed, the word "apple" must be typed first, and the words "plum" and "apricote" can be switched. The contest should consist of several rounds. Each round should be scored relatively to the best result, which is possible for the round. You are asked to calculate this best possible result.

Input

The first line of the input contains the T ($1 < T \leq 15$) the number of test cases. Then T test cases follow. The first line of each test contains a number N ($1 < N \leq 100$) the number of words that must be pressed. Next N lines contain word sequences of small Latin letters, not longer than 100 symbols. Remember that the first word must be pressed first!

Output

Output for every test case a line with the minimal possible number of presses needed.

Sample Input 1

```
3
3
this
thin
thing
4
popcorn
apple
apricote
plum
2
hello
hello
```

Sample Output 1

```
6
21
5
```