Problem B. BAZINGA
Time Limit: 1 seconds

Problem Description

Ladies and gentlemen, please sit up straight.

Don't tilt your head. I'm serious.



For n given strings $S_1, S_2, \cdots, S_n$, labelled from 1 to n, you should find the largest i $(1 \leq i \leq n)$ such that there exists an integer j $(1 \leq j < i)$ and S_j is not a substring of S_i.

A substring of a string S_i is another string that occurs **in** S_i. For example, "ruiz" is a substring of "ruizhang", and "rzhang" is not a substring of "ruizhang".

Input

The first line contains an integer t $(1 \leq t \leq 50)$ which is the number of test cases. For each test case, the first line is the positive integer n $(1 \leq n \leq 500)$ and in the following n lines list are the strings $S_1, S_2, \cdots, S_n$. All strings are given in lower-case letters and strings are no longer than 2000 letters.

Output

For each test case, output the largest label you get. If it does not exist, output -1.

Sample Input

```
4
5
ab
abc
zabc
abcd
zabcd
4
you
lovinyou
aboutlovinyou
allaboutlovinyou
5
de
def
abcd
abcde
abcdef
3
a
ba
ccc
```

Sample Output

```
Case #1: 4
Case #2: -1
Case #3: 4
Case #4: 3
```