

11548 Blackboard Bonanza

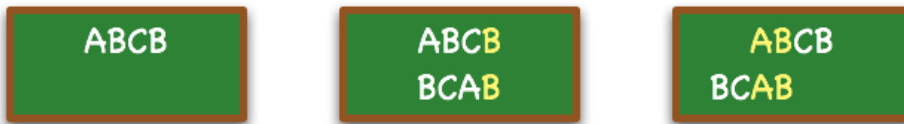
Alice and Bob both have lots of candies but want more. They decide to play the following turn-based game.

First they write some words on a few pieces of paper and put them into a bag so they cannot see the words. Next they decide whose turn is first. The first turn begins with the first player drawing and keeping a piece of paper with the word *A* from the bag and copying *A* onto a blackboard evenly spaced.

Then the second player draws and keeps a piece of paper with the word *B* on it. The current player is to write *B* on the blackboard underneath *A* evenly spaced. The second player receives one candy from the first for each character that matches vertically between *A* and *B*.

Now it is the first player's turn who similarly draws and places word *C* underneath *B* and gains a candy for each of the characters vertically matched between *B* and *C*. The game continues until there are no more words in the bag.

What is the maximum number of candies that one of Alice and Bob can possibly get in a turn?



*The game on the second blackboard awards the second player one candy.
The game on the third blackboard awards the second player two candies.*

Input

The first line of the input contains an integer t ($1 \leq t \leq 70$), the number of test cases. Each test case starts with an integer n ($2 \leq n \leq 70$), the number of words in the bag. Then follow n lines containing one word each (in no particular order). Each word will contain between 1 and 70 characters, all of them uppercase letters of English alphabet.

Output

For each test case, print a line containing the maximum number of candies either Alice or Bob can get in a single turn.

Sample Input

```
2
2
ALICE
BOB
2
ABCB
BCAB
```

Sample Output

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0
2
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