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Emoticons

Input: Standard Input
Output: Standard Output

Nowadays emoticon has become an art. People are no longer limited to simple ones like :-), :-(, :-P etc. They use >:O, ~_~, =^_^= and so on. Recently I came across ^_^ and it looks kind of cute to me. Given a string S consisting of only _'s and ^'s, I was wondering what is the maximum number of disjoint subsequences of "^_^" (quote for beauty) in the string S.

For example, if S = "^^__^^" then the answer is 2. However, for S = "_^^" the answer is 0.

Input

Input starts with a positive integer **T (<= 5,000)**, denoting the number of test cases. Hence follows **T** test cases. Each case consists of a single string made of only **^** and **_**. The length of the strings would be at most **100,000** and the sum of lengths of the strings will be **2,100,000** at most.

Output

For each test case, print the case number followed by the answer.

Sample Input	Output for Sample Input
5 _^^_^^_ ^__^__^ ______ ^^__^^ ^_^^_^	Case 1: 1 Case 2: 1 Case 3: 0 Case 4: 2 Case 5: 2

Hint:

- S[1…n] means S is a string of length n and it is 1-indexed.
- S_i means i'th character of S.
- A string S[1…n] is a subsequence of another string T[1…m], if we can find: (t_1, t_2, … t_n) such that, S[i] = T[t_i] for 1 <= i <= n and 1 <= t_1 < t_2 < … < t_n <= m. For example, "abc" is a subsequence of "aabbcc" but not of "bca".
- Two subsequences are disjoint if same character (position matters) is not used in both of the subsequences. For example, let S = "abca". "ab" and "ca" are two disjoint subsequences of S. However, if S = "abc" then "ab" and "ac" are not disjoint subsequences. In both of these examples the subsequences are unique. However, for S = "aabb" let's form two subsequences S_1S_3 and S_2S_4 (both are "ab"), both of these are disjoint. But if we have chosen S_1S_3 and S_1S_4 then they would not be disjoint.

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