Problem: FIL
Film Editor

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Limonia is a new dynamically developing city. Andrew Citrus (the Mayor of Limonia) decided that it should be promoted in order to increase the number of tourists visiting it in the future. For this purpose, he hired a film crew whose task was to make a film depicting the most interesting sides of Limonia. The filmmakers carried out their duty perfectly and prepared a film consisting of n shots depicting many interesting aspects of Limonia, e.g. the picturesque pen of Puffnootsy the wombat or the well-developed chain of pizzerias. However, it displeased Citrus that not the entire film had a dynamic character compatible with the pace of development of Limonia. Some of the shots were dynamic indeed, but more static shots also appeared, for example conversations with very important persons.

As city promotion films do not usually have strictly imposed chronology, the Major decided to edit the shots on his own. He cares about maximising the length of the longest dynamic scene. He would not like to introduce too much chaos though, so he decided to cut the film reel using at most k cuts and edit the resulting fragments in order of his choice (of course he cannot reverse a fragment back-to-front). Help the Major and tell him how long dynamic scene he can edit!

A scene is a sequence of consecutive shots and its length is the number of shots it consists of. A scene is called dynamic if it consists of dynamic shots only.

Input

In the first line of the input file there is one integer t ($1 \leqslant t \leqslant 10$) specifying the number of test cases. In every of the following t lines a description of one test case can be found. It consists of an integer k ($0 \leqslant k \leqslant 100\,000$) specifying the maximum number of cuts which may be performed by Andrew Citrus and a n-letter word ($1 \leqslant n \leqslant 100\,000$) consisting of letters `D` and `S`: the i-th letter stands for the type of the i-th shot in the film (the letter `D` stands for a dynamic shot, and the letter `S` stands for a static shot).

Output

The output file should consist of t lines containing answers to the consecutive test cases from the input. The answer to a test case is an integer meaning the length of the longest dynamic scene which can be edited by the Major.

Scoring

Scoring of this problem is binary; in the case of correct answer the score for a test is 1. Percentage of guaranteed points is 50%.

Example

For the input data:

```
2
2 DDSDSSD
3 DSDSDSD
```

the correct result is:

```
4
3
```

Explanation of the example: If we cut the first film using two cuts to three pieces of lengths respectively 3, 1 and 3 shots, and next we edit them in the reverse order, then all 4 dynamic shots will be placed in one dynamic scene.