

Problem B. AB Flipping

Time limit 1000 ms

Mem limit 262144 kB

You are given a string s of length n consisting of characters **A** and **B**. You are allowed to do the following operation:

- Choose an index $1 \leq i \leq n - 1$ such that $s_i = \text{A}$ and $s_{i+1} = \text{B}$. Then, swap s_i and s_{i+1} .

You are only allowed to do the operation **at most once** for each index $1 \leq i \leq n - 1$.

However, you can do it in any order you want. Find the maximum number of operations that you can carry out.

Input

Each test contains multiple test cases. The first line contains the number of test cases t ($1 \leq t \leq 1000$). Description of the test cases follows.

The first line of each test case contains a single integer n ($2 \leq n \leq 2 \cdot 10^5$) — the length of string s .

The second line of each test case contains the string s ($s_i = \text{A}$ or $s_i = \text{B}$).

It is guaranteed that the sum of n over all test cases does not exceed $2 \cdot 10^5$.

Output

For each test case, print a single integer containing the maximum number of operations that you can carry out.

Examples

Input	Output
3 2 AB 4 BBBA 4 AABB	1 0 3

Note

In the first test case, we can do the operation exactly once for $i = 1$ as $s_1 = \text{A}$ and $s_2 = \text{B}$.

In the second test case, it can be proven that it is not possible to do an operation.

In the third test case, we can do an operation on $i = 2$ to form **ABAB**, then another operation on $i = 3$ to form **ABBA**, and finally another operation on $i = 1$ to form **BABA**. Note that even though at the end, $s_2 = \text{A}$ and $s_3 = \text{B}$, we cannot do an operation on $i = 2$ again as we can only do the operation at most once for each index.