

## E. Wonderful Teddy Bears

time limit per test: 2 seconds  
memory limit per test: 256 megabytes

You are the proud owner of  $n$  teddy bears, which are arranged in a row on a shelf. Each teddy bear is colored either black or pink.

An arrangement of teddy bears is *beautiful* if all the black teddy bears are to the left of all the pink teddy bears. In other words, there **does not** exist a pair of indices  $(i, j)$  ( $1 \leq i < j \leq n$ ) such that the  $i$ -th teddy bear is pink, and the  $j$ -th teddy bear is black.

You want to reorder the teddy bears into a beautiful arrangement. You are too short to reach the shelf, but luckily, you can send instructions to a robot to move the teddy bears around. In a single instruction, the robot can:

- Choose an index  $i$  ( $1 \leq i \leq n - 2$ ) and reorder the teddy bears at positions  $i$ ,  $i + 1$  and  $i + 2$  so that all the black teddy bears are to the left of all the pink teddy bears.

What is the minimum number of instructions needed to reorder the teddy bears?

### Input

Each test contains multiple test cases. The first line contains the number of test cases  $t$  ( $1 \leq t \leq 10^4$ ). The description of the test cases follows.

The first line of each test case contains a single integer  $n$  ( $3 \leq n \leq 2 \cdot 10^5$ ) — the number of teddy bears.

The second line of each test case contains a single string  $s$  of length  $n$  consisting of characters **B** and **P** — the colors of the teddy bears. For each  $i$  from 1 to  $n$ , the  $i$ -th teddy bear is colored black if  $s_i = \text{B}$  and pink if  $s_i = \text{P}$ .

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

### Output

For each test case, output a single integer — the minimum number of instructions needed to reorder the teddy bears.

### Example

input	Copy
5	
3	
PPP	
3	
BPP	
3	
PPB	
7	
PPBPPBB	
15	
BPBPBBBBBPBBBBB	
output	Copy
0	
0	
1	
5	
14	

### Note

For the first test case, all the teddy bears are pink. Thus, the arrangement is already beautiful, so the answer is 0.

For the second test case, all the black teddy bears are to the left of all the pink teddy bears. Thus, the answer is 0.

For the third test case, we can perform 1 instruction with  $i = 1$ .

### Neowise Labs Contest 1 (Codeforces Round 1018, Div. 1 + Div. 2)

Finished

Practice



#### → Virtual participation

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Start virtual contest

#### → Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

#### → Submit?

Language: GNU G++23 14.2 (64 bit, ms)

Choose file: Choose File No file chosen

Submit

#### → Last submissions



Submission	Time	Verdict
<a href="#">316345328</a>	Apr/20/2025 10:05	Accepted

#### → Problem tags

greedy implementation sortings

No tag edit access

#### → Contest materials

- Announcement (en) 
- Tutorial (en) 

⬆ After the instruction, the sequence of colors changes from **PPB** to **BPP**, and we are done.

For the fourth test case, we can perform 5 instructions as follows:

- $i = 1$ : **PPB**PPBB → **BPP**PPBB
- $i = 5$ : **BPP**PPBB → **BPP**BBP
- $i = 4$ : **BPP**BBP → **BPP**BBP
- $i = 3$ : **BPP**BBP → **BP**BBPP
- $i = 2$ : **BP**BBPP → **BB**PPPP

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