



HOME TOP CATALOG CONTESTS GYM PROBLEMSET GROUPS RATING EDU API CALENDAR HELP

PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS STANDINGS CUSTOM INVOCATION

A. Dr. TC

time limit per test: 1 second memory limit per test: 256 megabytes

In order to test his patients' intelligence, Dr. TC created the following test.

First, he creates a binary string* s having n characters. Then, he creates n binary strings a_1,a_2,\ldots,a_n . It is known that a_i is created by first copying s, then flipping the i'th character (1 becomes 0 and vice versa). After creating all n strings, he arranges them into a grid where the i'th row is a_i .

For example,

- If s = 101, a = [001, 111, 100].
- If s = 0000, a = [1000, 0100, 0010, 0001].

The patient needs to count the number of 1s written on the board in less than a second. Can you pass the test?

*A binary string is a string that only consists of characters 1 and 0.

Input

The first line of the input consists of a single integer t ($1 \leq t \leq 1000$) — the number of test cases.

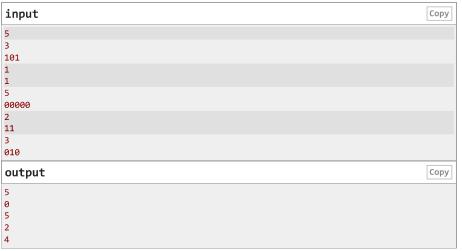
The first line of each test case contains a single integer n ($1 \le n \le 10$) — the length of the binary string s.

The second line of each test case contains a single binary string \boldsymbol{s} of size $\boldsymbol{n}.$

Output

For each test case, output a single integer, the number of 1s on the board.

Example



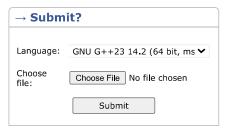
Note

The first example is explained in the statement.

For the second example, the only string written on the board will be the string $\mathbf{0}$; therefore, the answer is $\mathbf{0}$.

In the third example, the following strings will be written on the board: [10000, 01000, 00100, 00010, 00001]; so there are five 1s written on the board.





→ Last submissions		
Submission	Time	Verdict
317010796	Apr/24/2025 18:01	Accepted
316996724	Apr/24/2025 17:48	Wrong answer on test 1
316992875	Apr/24/2025 17:46	Wrong answer on test 1

Server time: Apr/24/2025 17:02:50^{UTC+2} (k1). Desktop version, switch to mobile version.

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