A. String
Zadanie z Codeforces / Div. 1&2 / A

Zadanie pochodzi z platformy Codeforces:
https://codeforces.com/contest/2062/problem/A

A. String

time limit per test: 1 second
memory limit per test: 512 megabytes

You are given a string s of length n consisting of 0 and/or 1. In one operation, you can select a non-empty subsequence t from s such that any two adjacent characters in t are different. Then, you flip each character of t (0 becomes 1 and 1 becomes 0). For example, if $s = \underline{00}1\underline{01}$ and $t = s_1s_3s_4s_5 = 0101$, after the operation, s becomes $\underline{1}0\underline{010}$.

Calculate the minimum number of operations required to change all characters in s to 0.

Recall that for a string $s = s_1s_2 \ldots s_n$, any string $t = s_{i_1}s_{i_2} \ldots s_{i_k}$ ($k \geq 1$) where $1 \leq i_1 < i_2 < \ldots < i_k \leq n$ is a subsequence of s.

Input

The first line of input contains a single integer t ($1 \leq t \leq 10^4$) — the number of input test cases.

The only line of each test case contains the string s ($1 \leq |s| \leq 50$), where $|s|$ represents the length of s.

Output

For each test case, output the minimum number of operations required to change all characters in s to 0.

Example

Input

5
1
000
1001
10101
01100101011101

Output

1
0
2
3
8

Note

In the first test case, you can flip s_1. Then s becomes 0, so the answer is 1.

In the fourth test case, you can perform the following three operations in order:

1. Flip $s_1 s_2 s_3 s_4 s_5$. Then s becomes 01010.
2. Flip $s_2 s_3 s_4$. Then s becomes 00100.
3. Flip s_3. Then s becomes 00000.

It can be shown that you can not change all characters in s to 0 in less than three operations, so the answer is 3.