

## B. Ternary String

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

You are given a string  $s$  such that each its character is either 1, 2, or 3. You have to choose the shortest contiguous substring of  $s$  such that it contains each of these three characters at least once.

A contiguous substring of string  $s$  is a string that can be obtained from  $s$  by removing some (possibly zero) characters from the beginning of  $s$  and some (possibly zero) characters from the end of  $s$ .

### Input

The first line contains one integer  $t$  ( $1 \leq t \leq 20000$ ) — the number of test cases.

Each test case consists of one line containing the string  $s$  ( $1 \leq |s| \leq 200000$ ). It is guaranteed that each character of  $s$  is either 1, 2, or 3.

The sum of lengths of all strings in all test cases does not exceed 200000.

### Output

For each test case, print one integer — the length of the shortest contiguous substring of  $s$  containing all three types of characters at least once. If there is no such substring, print 0 instead.

### Example

input	Copy
7 123 12222133333332 112233 332211 12121212 333333 31121	
output	Copy
3 3 4 4 0 0 4	

### Note

Consider the example test:

In the first test case, the substring 123 can be used.

In the second test case, the substring 213 can be used.

In the third test case, the substring 1223 can be used.

In the fourth test case, the substring 3221 can be used.

In the fifth test case, there is no character 3 in  $s$ .


In the sixth test case, there is no character 1 in  $s$ .

In the seventh test case, the substring 3112 can be used.

**Educational Codeforces Round 87**  
**(Rated for 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++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
<a href="#">256626097</a>	Apr/14/2024 13:01	Accepted

→ Problem tags

binary search dp implementation

two pointers \*1200

No tag edit access

→ Contest materials

Announcement

Tutorial

