acm International Collegiate Programming Contest IBM event sponsor	**Problem C** One's	ACM-ICPC Thailand Mini Programming Contest Local Training 2016 SiPA

Given a very long number, $x = a_1, a_2, a_3, \ldots, a_n$ where each a_i is a single digit from 0 to 9. We want to represent each digit using a 4-bit string. For example, if your number x is 12, then we represent it a 00010010. We want you to count the number of times at least 4 consecutive 0's appear in the string.

Input

First line contains an integer, *T*, represent the number of test cases. 1 <= T <= 100

For each test case, there is a single line of input. For each case, it contains the number that must be converted to the string of 0 and 1. The number will not be longer than 250 digits.

Output

Answer in *T* lines. Each line contains the number of times that at least 4 consecutive 0's appear in the string.

Example

Input	Output
3 12 21 20	0 1 1