Problem G. Periodic Palindrome

Input file:	*standard input*
Output file:	*standard output*
Time limit:	2 seconds
Memory limit:	256 mebibytes

Chiaki had a string $\ldots ww^r ww^r \ldots$ with infinite length, where $w = w_1 w_2 \ldots w_m$ and $w^r = w_m w_{m-1} \ldots w_1$.

Chiaki cut out a substring $s = s_1 s_2 \ldots s_n$ $(m < n)$ from the infinite string. Additionally, it is known that s contained w or w^r as a substring.

After that, Chiaki forgot the string w, together with its length m. All she has now is the string s. She would like to know the number of pairs (i, j) where $1 \le i \le j \le n$ and $s_{i..j} = s_i s_{i+1} \ldots s_j$ is a possible value of w or w^r.

Input

There are multiple test cases. The first line of input contains an integer T indicating the number of test cases. For each test case:

The first line contains a string s $(2 \le |s| \le 10^6)$ consisting only of lowercase English letters.

It is guaranteed that the sum of $|s|$ in all cases does not exceed 10^6.

Output

For each test case, output an integer denoting the answer.

Example

standard input	standard output
1 aaa	5