

## Problem B

# Best Substring

Time limit: 7 seconds

Memory limit: 1024 megabytes

### Problem Description

You are given a string  $s = s_1s_2s_3\dots s_n$ . Let  $f(s, i)$  denotes the starting position of the best length- $i$  substring. For two equal-length substring  $a$  and  $b$ , the one has smaller lexicographically order is better. If the two substring are the same, the one has smaller starting position is better.

Let  $h(s) = \sum_{i=1}^n i \times f(s, i)$ . Your task is to find  $h(s)$ .

### Input Format

First line contains the number of testcases  $T$ . Each testcase is a line containing a string  $s$ .

### Output Format

For each testcase, output  $h(s)$  in one line.

### Technical Specification

- $1 \leq T \leq 10^5$
- $1 \leq |s| \leq 2 \times 10^5$
- The total length of strings is at most  $2 \times 10^6$

### Sample Input 1

```
3
apple
banana
abcdabcd
```

### Sample Output 1

```
15
36
36
```