

New Distinct Substrings

Given a string, we need to find the total number of its distinct substrings.

Input

T- number of test cases. $T \leq 20$; Each test case consists of one string, whose length is ≤ 50000

Output

For each test case output one number saying the number of distinct substrings.

Example

Input:

2

CCCCC

ABABA

Output:

5

9