Task 2

Algorithms

PROBLEM STATEMENT:

TASK 2(A): Find the Length

A company hires Inderraj as a typewriter. His work is to type proper bracket strings. However Inderraj is so lazy that he does not really take his job seriously and ends with messing up.

Now the company hires you to find the longest proper bracket sequence from starting that is perfectly written by inderraj.

More formally find the longest proper prefix bracket sequence written by him.

Input

Input will consist of an integer T denoting the number of test cases to follow.

Then, T strings follow, each on a single line, representing a string of bracket.

Output

Output t lines each containing answer.

Constraints

$1 \leq T \leq 500$

$1 \leq$ The length of a single expression $\leq 10^6$

The total size all the input expressions is no more than 5.10^6

SAMPLE

Input:

3

<<>>

<>>>

><><>

Output:

4

2

0

TASK 2(B): Max Element in Array

You are given with an array of integers with size **n** , where a[i]=i. You will be given with **q** queries. In each query you have to add a value '**v**' to each of the array element between the given indices (*l*,*r*) inclusive of both the indices. As a result, you have to return the maximum element of the resultant array after **q** operations.

Input:

Number of elements in the array, n

Number of queries to be performed, q

Next q lines contain three integers each l, r, v.

Constraints:

$1<=n<=10^5$ and $1<=q<=10^5$

Left(L) and Right(R) indices for query: 1<=L<=R<=n

Value to be added, v: $1<=v<=10^9$

SAMPLE

Input:

5

3

1 4 10

2 2 20

3 5 25

Output:

39

TASK 2(C): Stairs Problem

Anuj has to climb up stairs to reach the first floor of his home. He can either climb up one step or two steps at a time. However there is a catch. There are some stairs that are not safe to step on. You have to count the number of ways that Anuj can reach the nth stair. He is initially on the ground floor, i.e., 0th step. Since the number of ways can be a large number, find the count modulo 10^9+7.

Input

The first line has integers n, the number of stairs and m, the number of broken stairs.

The next m lines have the positions of the broken steps.

Output

Print the number of ways, modulo 1000000007.

Constraints

$1 \leq n \leq 10^5$

$1 \leq m \leq n-1$

$1 \leq broken_i \leq n-1$

SAMPLE

Input:

2 1

1

Output:

1

Explanation: 0 -> 2

Input:

8 2

2

4

Output:

3

Explanation:

0 -> 1 -> 3 -> 5 -> 6 -> 7 -> 8

0 -> 1 -> 3 -> 5 -> 7 -> 8

0 -> 1 -> 3 -> 5 -> 6 -> 8

Input:

10 3

5

6

9

Output:

0

TASK 2(D): Maximum Possible Sum

There exist an integer array A of length N whose values are unknown to us. We are given an integer sequence B of length N−1 as input. We also know that: $B_i \geq \max(A_i, A_{i+1})$ (i.e., every value of B array at i^{th} index ,will be greater than values at A_i and A_{i+1} , for every i from 0 to N-1).

Find the maximum possible sum of the elements of A.

Input

First line will have an integer N, the length of A array.

second line will have N-1 spaced integers, representing the elements of B array.

N

B_1 B_2 B_3 ..... B_{N-1}.

Output

Print the maximum possible sum of the elements of A

Constraints

$2 \leq N \leq 100$

$1 \leq B_i \leq 10^5$

SAMPLE

Input:

3

2 5

Output:

9

Input:

2

3

Output:

6

GUIDELINES:

The best practice anyone could do is solving question. We have complied few questions. We want you to explore each topic and solve these questions while doing so. If you are stuck or have any doubts you can always ping your mentor. Happy Coding :)

EVALUATION METRICS:

- Plagiarism of any sort will result in elimination
- These tasks will be followed by personal interviews and if candidates fail to explain their concept and code, they will be eliminated
- Novel approaches will be rewarded
- Time Complexity and Space complexity for each solution will be considered for evaluation.

SUBMISSION:

Submit your codes here : hackerrank