



Connecting Towns



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Problem

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Gandalf is travelling from **Rohan** to **Rivendell** to meet Frodo but there is no direct route from **Rohan** (T_1) to **Rivendell** (T_n).

But there are towns $T_2, T_3, T_4, \dots, T_{n-1}$ such that there are N_1 routes from Town T_1 to T_2 , and in general, N_i routes from T_i to T_{i+1} for $i=1$ to $n-1$ and 0 routes for any other T_i to T_j for $j \neq i+1$.

Find the total number of routes Gandalf can take to reach Rivendell from Rohan.

Note

Gandalf has to pass all the towns T_i for $i=1$ to $n-1$ in numerical order to reach T_n .

For each T_i , T_{i+1} there are only N_i distinct routes Gandalf can take.

Input Format

The first line contains an integer T , T test-cases follow.

Each test-case has 2 lines. The first line contains an integer N (the number of towns).

The second line contains $N - 1$ space separated integers where the i^{th} integer denotes the number of routes, N_i , from the town T_i to T_{i+1} .

Output Format

Total number of routes from T_1 to T_n modulo 1234567

http://en.wikipedia.org/wiki/Modular_arithmetic

Constraints

$1 \leq T \leq 1000$

$2 \leq N \leq 100$

$1 \leq N_i \leq 1000$

Sample Input

```
2
3
1 3
4
2 2 2
```

Sample Output

```
3
8
```

Explanation

Case 1: 1 route from T_1 to T_2 , 3 routes from T_2 to T_3 , hence only 3 routes.

Case 2: There are 2 routes from each city to the next, at each city, Gandalf has 2 choices to make, hence $2 * 2 * 2 = 8$.





Submissions: 12767

Max Score: 10

Difficulty: Easy

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★★★★★ Thanks!

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C#



```
1 using System;
2 using System.Collections.Generic;
3 using System.IO;
4 class Solution {
5     static void Main(String[] args) {
6         /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Solution
7         */
8         int t = int.Parse(Console.ReadLine());
9
10        while (t-- > 0)
11        {
12            int n = int.Parse(Console.ReadLine());
13            int[] routes = Array.ConvertAll(Console.ReadLine().Split(' '), e => int.Parse(e));
14
15            long prod = 1;
16
17            for (int i = 0; i < routes.Length; i++)
18            {
19                prod = (prod % 1234567) * (routes[i] % 1234567);
20            }
21
22            Console.WriteLine(prod % 1234567);
23        }
24    }
25 }
26
27
28 }
```

Line: 23 Col: 14

 [Upload Code as File](#)☐ Test against custom input[Run Code](#)[Submit Code](#)

Congrats, you solved this challenge!

✓ Test Case #0
✓ Test Case #3
✓ Test Case #6
✓ Test Case #9

✓ Test Case #1
✓ Test Case #4
✓ Test Case #7

✓ Test Case #2
✓ Test Case #5
✓ Test Case #8

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