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⭐ Walls

Consider N walls, each of unit width, situated next to each other.

You have to select any two walls i and j ($1 \leq i, j \leq N$) such that if you break all walls except i and j and fill spaces between them with water, then the amount of water stored is maximum

write a program to find the maximum amount of water that can be accumulated between the walls.

⭐ Array and The Tree

Q.3 You are given an array of size N. The array is formed using a tree rooted at node 1.

Array generation code:-

```
generate (node)
{
    if (node == 1)
      insert node into the array
    visited [node] = true;
   for (all nodes in the adjacency list of node)
   {
      child = node in adjacency list
      if (child is not visited)
      { insert child into the array
        generate (child)
```

You have to obtain the tree using the array and print the number of nodes in the subtree of every node.

Sample Input

1
2
4
0 1 15 6
2 0 7 3
9 6 0 12
10 4 8 0

Sample Output

20

Q.4

Explanation - path = 1 → 2 → 4 → 3 → 2 → 1

(2) Unique Subsequence -

You are given randomly generated string of characters ranging from a to z. You have to tell no. of unique subsequences that can be formed equal to following string "abcdefghijklmnopqrstuvwxyz"

Note -

A subsequence is unique when at least a single character has its index i.e. different from all other subsequences.

Print answer modulo 1000000007

INPUT

3
27
abcdefghijklmnopqrstuvwxyzz
abz
abcdefghijklmnnopqrstuvwxyzyzz

OUTPUT

2
0
4

Forgotten Report - Q.5

There are N cities in a state, You start your ride from First city. You have to visit all other cities exactly once and finally return to your origin city. After visiting each city, you collect analysis report.

But when you reached last visited city, you remembered that you did not collect report from city K. So, now you decide to first collect report from city K and then return to your home city.

Given distances between each pair of cities, you are required to find shortest possible distance of your whole journey.

INPUT →

① input begins with T (no. of test cases)

② Contains K (city No. Where you forgot to collect report.

③ contains N (no. of cities).

④ There are N lines. Ith line have exactly N numbers denoting distance from city I to all 'N' cities.

OUTPUT -

For each test case print Minimum distance of total journey.

Constraints -

$1 \le T \le 10$

$1 \le N \le 18$

$1 \le K < N$

$0 \le dist(i, j) \le 100$

Sample Input

1