Puzzles:

1. A man fell in a 50m deep well. He climbs 4 meters up and slips 3 meters down in one day. How many days would it take for him to come out of the well?
2. A man works on the 10-th floor and takes the elevator down to ground level at the end of the day. Yet every morning, he only takes the elevator to the 7th floor, even when in a hurry. But he goes all the way to the 10-th floor when others are in the elevator with him or it is a rainy day. Why?

Average Program Question:

1. Given an sorted array **A** of size **N**. Find the number of elements which are less than or equal to given element **X**.

   Input:

   The first line of input contains an integer **T** denoting the number of test cases. Then **T** test cases follow. Each test case contains 3 lines of input. The first line contains an integer **N** denoting the size of the array. Then the next line contains **N** space separated integers forming the array. The third line contains an element **X**.

   Output:

   For each test case, in a new line, print the number of elements which are less than or equal to the given element.

   Example:

   Input:

   2

   6

   1 2 4 5 8 10

   9

   7

   1 2 2 2 5 7 9

   2

   Output:

   5

   4

2. Given an array **Arr** of size **N**, print the second largest element from an array.
Example 1:

Input:
N = 6
Arr[] = {12, 35, 1, 10, 34, 1}
Output: 34
Explanation: The largest element of the
array is 35 and the second largest element
is 34.

3. Given an array **A** of size **N** of integers. Your task is to find the **minimum and maximum** elements in the array.

Input: The first line of input contains an integer **T** denoting the number of test cases. T test cases follow. Each test case contains 2 lines of input. The first line of each test case contains the size of array **N**. The following line contains elements of the array separated by spaces.

Output:

For each test case, print the **minimum and maximum** element of the array.

Example: Input:

2

6

3 2 1 56 10000 167

5

1 345 234 21 56789

Output:

1 10000

1 56789

4. Given an integer array **A** of size **N**, find the sum of elements in it.

Input: First line contains an integer denoting the test cases **'T'**. T test cases follow. Each test case contains two lines of input. First line contains **N** the size of the array **A**. The second line contains the elements of the array.

Output: For each test case, print the sum of all elements of the array in separate lines.

Example:Input:

2

3

3 2 1

4

1 2 3 4

Output:

6

10

5. Given an array **A** of size **N**, print the reverse of it.

   Input: First line contains an integer denoting the test cases **'T'**. T test cases follow. Each test case contains two lines of input. First line contains **N** the size of the array **A**. The second line contains the elements of the array.

   Output: For each test case, in a new line, print the array in reverse order.

   Example:

   Input:

   1

   4

   1 2 3 4

   Output:

   4 3 2 1

Difficult Question:

1. **Given a N x N matrix M. Write a program to find the count of all the distinct elements common to all rows of the matrix. Print count of such elements.**

   Example 1: Input: N = 4

   M = {{2, 1, 4, 3},
   {1, 2, 3, 2},
   {3, 6, 2, 3},
   {5, 2, 5, 3}}
   Output: 2
   Explanation: Only 2 and 3 are common in all rows.

   Example 2: Input: N = 5

M = {{12, 1, 14, 3, 16},
{14, 2, 1, 3, 35},
{14, 1, 14, 3, 11},
{14, 5, 3, 2, 1},
{1, 18, 3, 21, 14}}
Output: 3
Explanation: 14, 3 and 1 are common in all the rows.

2. **Given two linked lists, your task is to complete the function makeUnion(), that returns the union of two linked lists. This union should include all the distinct elements only.Example 1:**

   Input:

   L1 = 9->6->4->2->3->8

   L2 = 1->2->8->6->2

   Output: 1 2 3 4 6 8 9

3. **Given a set of N nuts of different sizes and N bolts of different sizes. There is a one-one mapping between nuts and bolts. Match nuts and bolts efficiently.**

   Comparison of a nut to another nut or a bolt to another bolt is not allowed. It means nut can only be compared with bolt and bolt can only be compared with nut to see which one is bigger/smaller.

   The elements should follow the following order ! # $ % & * @ ^ ~ .

   Example 1:

   Input:

   N = 5

   nuts[] = {@, %, $, #, ^}

   bolts[] = {%, @, #, $ ^}

   Output:

   # $ % @ ^

   # $ % @ ^

Example 2:

Input:

N = 9

nuts[] = {^, &, %, @, #, *, $, ~, !}

bolts[] = {~, #, @, %, &, *, $,^, !}

Output:

! # $ % & * @ ^ ~

! # $ % & * @ ^ ~

Your Task:

You don't need to read input or print anything. Your task is to complete the function matchPairs() which takes an array of characters nuts[], bolts[] and n as parameters and returns void. You need to change the array itself.