Course Code: CSE-1102, Title: Introduction to Computer Systems Lab.

**Class Roll:**                                                   **Exam Roll:**

## PROBLEM SET A

The farmers are cool, bearded workers, while their manager tends to be bossy and simpleminded. The manager like to harass the farmers by making them line up in groups of ten, ordered by the length of their beards. The farmers, being of different physical heights, vary their arrangements to confuse the manager. Therefore, the manager must actually measure the beards in centimeters to see if everyone is lined up in order.

1. Your task is to write a program to assist the manager in determining whether or not the farmers are lined up properly, either in ascending (shortest to longest) or descending (longest to shortest) order.
2. If the farmers are not in any order then order the group in ascending order.

### Input

The input starts with line containing a single integer N, $0 < N < 20$, which is the number of groups to process. Following this are N lines, each containing ten distinct positive integers less than 100.

### Output

1. If the group is in ascending or in descending order then print **Ordered**.
2. If not in any order then in the first line print **Unordered** and in second line print the ordered list in ascending order.

   **NB:** See the sample output for capitalization and result format.

### Sample Input

3
13 25 39 40 55 62 68 77 88 95
**88 62 77 20 40 10 99 56 45 36**
91 78 61 59 54 49 43 33 26 18

### Sample Output

Ordered

**Unordered**

**10 20 36 40 45 56 62 77 88 99**

Ordered

***************End*************

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## PROBLEM SET B

**Rebelo** is the hero of a Game where the final target is to rescue the princess from a secret room. Rebelo is in the final castle. He now needs to jump over few walls and then enter the Secret Chamber where he has to defeat the monster in order to save the princess. For this problem, we are only concerned with the "jumping over the wall" part. You will be given the heights of N walls from left to right. Rebelo is currently standing on the first wall. He has to jump to the adjacent walls one after another until he reaches the last one. That means, he will make (N − 1) jumps.
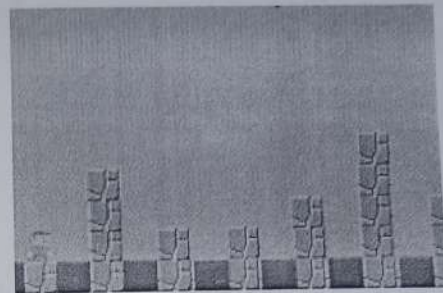
A high jump is one where Rebelo has to jump to a taller wall, and similarly, a low jump is one where he has to jump to a shorter wall and a level jump where the height of next wall is equal to current wall. Can you find out the total number of **high jumps, low jumps and level jumps** Rebelo has to make?

## Input

The first line of input is an integer T (T < 30) that indicates the number of test cases. Each case starts with an integer N (0 < N < 50) that determines the number of walls. The next line gives the height of the N walls from left to right. Each height is a positive integer not exceeding 10.

## Output

For each test case, output the case number followed by 3 lines:

1.  In the first line print the test case number. (Example: Test Case 1: ).
2.  In the second line output followed by 3 integers, total high jump, total level jump and total low jump.
3.  In the third line, output followed by 2 integers, first one is total sum of the height of all wall and in the second line height of maximum wall.

| Sample Input | Sample Output |
|---|---|
| 3 | Test Case 1: |
| 8 | 4 2 1 |
| 1 4 2 2 3 5 3 4 | 24 5 |
| 1 | Test Case 2: |
| 9 | 0 0 0 |
| 5 | 9 9 |
| 1 2 3 4 5 | Test Case 3: |
|  | 4 0 0 |
|  | 15 5 |

***********End***********

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### PROBLEM SET C

Company XYZ have been badly hit by recession and is taking a lot of cost cutting measures. Some of these measures include giving up office space, going open source, reducing incentives, cutting on luxuries and issuing pink slips.

They have got four (4) employees working in the accounts department and are going to lay-off three (3) of them. After a series of meetings, they have decided to keep the person who gets the salary nearest of median among four. In this condition, two or more employees may can survive. In this case, only one employee with the minimum salary among these will be selected.

You will be given the salaries of these 4 employees working in the accounts department. You have to find out the salary of the person who survives.

### Input

The first line of input is an integer T (T < 20) that indicates the number of test cases. Each case consists of a line with 4 distinct positive numbers. These 4 numbers represent the salaries of the four employees. All these numbers will be in the range [1000, 10000].

### Output

For each case, output the case number followed by the salary of the person who survives.

### Sample Input

3

1000 2000 3000 2500

3000 2500 1500 1000

1500 1200 1800 2600

### Sample Output

Case 1: 2000

Case 2: 1500

Case 3: 1800

************End***********