

Two Sum Query

You will be given an array A of size N and also given Q queries. In each query you will be given a number K . You have to print two number S_1 and S_2 . Where S_1 is the sum of all the elements that are **strictly less than** K and S_2 is the sum of all the elements that are **strictly greater than** K .

Input

Input starts with an integer T ($1 \leq T \leq 20$), denoting the number of test cases. Each test case starts with two integers N ($1 \leq N \leq 10^5$) and Q ($1 \leq Q \leq 10^5$). N denotes the number of elements in the array and Q is the number of query. The next line contain N integers $A_0, A_1, A_2, \dots, A_{N-1}$ ($0 \leq A_i \leq 10^9$). Then the next line contains Q integers K ($0 \leq K \leq 10^9$). For each K you have to print S_1 and S_2 .

Output

For each test case print "Case X:" (without quotes) where X is the running test case number. Then next Q line consist S_1 and S_2 for every given K in the current test case. Where S_1 is the sum of all the elements that are **strictly less than** K and S_2 is the sum of all the elements that are **strictly greater than** K .

Sample Input:

```
2
10 5
5 1 0 8 1 13 34 21 3 2
1 2 3 4 35
7 2
6 24 120 1 720 2 1
1 23
```

Sample Output:

```
Case 1:
0 86
2 84
4 81
7 81
88 0
Case 2:
0 872
10 864
```