Problem G. Points in Segments

Time limit 2000 ms
Mem limit 65536 kB

Given **n** points (1 dimensional) and **q** segments, you have to find the number of points that lie in each of the segments. A point p_i will lie in a segment **A B** if $A \le p_i \le B$.

For example if the points are **1, 4, 6, 8, 10**. And the segment is **0** to **5**. Then there are **2** points that lie in the segment.

Input

Input starts with an integer **T (≤ 5)**, denoting the number of test cases.

Each case starts with a line containing two integers **n** $(1 \le n \le 10^5)$ and **q** $(1 \le q \le 50000)$. The next line contains **n** space separated integers denoting the points in ascending order. All the integers are distinct and each of them range in $[0, 10^8]$.

Each of the next **q** lines contains two integers A_k B_k $(0 \le A_k \le B_k \le 10^8)$ denoting a segment.

Output

For each case, print the case number in a single line. Then for each segment, print the number of points that lie in that segment.

Sample

Input	Output
1 5 3 1 4 6 8 10 0 5 6 10 7 100000	Case 1: 2 3 2

Note

Dataset is huge, use faster I/O methods.