

Online Judge

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Exercise Author

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Problem Buyer

Time Limit: 8000/4000 MS (Java/Others) Memory Limit: 32768/32768 K (Java/Others) Total Submission(s): 218 Accepted Submission(s): 66

Problem Description

TopSetter is an organization that creates problems. They've prepared N problems with estimated difficulty score in range [A_i, B_i]. TopHoster would like to host a contest consisting of M problems.

The i^{th} problem should be of difficulty score C_i . The i^{th} problem from TopSetter can be used in the contest if and only if its estimated difficulty score range $[A_i, B_i]$ covers the difficulty score c of its target problem in the contest, i.e. $A_i \le c \le B_i$. Hosting a contest with M problems needs tohave M distinct problems which satisfy the required difficulty scores for each problem.

Unfortunately, TopSetter doesn't provide a service to buy specific problems. You can only request a problem set containing K problems and they will give you K distinct problems from all the N problems, but you don't know which problems will be given.

As TopSetter is the only problem provider for TopHoster, TopHoster would like to know the least number K of problems they need to buy to make sure they can host a contest.

Input

The first line of the input gives the number of test cases, T. T test cases follow. Each test case starts with 2 integers, N and M. Then N lines follow, each line consists of 2 integers representing the difficulty score range of the i^{th} problem, A_i and B_i . The last line of each test case consists of M integers representing the target difficulty scores of the M problems C_i .

Output

For each test case, output one line containing "Case #x: y", where x is the test case number (starting from 1) and y is the least number of problems which the TopHoster needs to buy.

Output "IMPOSSIBLE!" if it's impossible.

limits

- •1 $\leq T \leq 100$.
- •1 $\leq N, M \leq 10^{5}$.
- •1 $\leq A_i \leq \overline{B}_i \leq 10^9$. •1 $\leq C_i \leq 10^9$.

Sample Input

3 1

1 4

2 3 5 6

3 2

1 10

3 4 7 9

4 8

5 6

8 9 1 5 10

Sample Output

Case #2: 2
Case #3: IMPOSSIBLE!

Source

2016 CCPC-Final

Recommend

jiangzijing2015 | We have carefully selected several similar problems for you: 6216 6215 6214 6213 6212

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Administration