

A young farmer has N cows, but they produced really really a very very small amount of milk. John cannot live on the milk they made, so he's planning to eat some of the 'worst' cows to get rid of hunger. Each day, John chooses the cow that produces the LEAST amount of milk on that day and eat them. If there are more than one cow with minimal milk, John will be puzzled and will not eat any of them (Yeah! That's GREAT!!).

The i -th cow has a cycle of production T_i . That means, if it produces L unit milk on one day, it will also produce L unit after T_i days — If it will not be eaten during these day :-). Though John is not a clever man, he doubts whether the cows will be eventually eaten up, so he asks for your help. Don't forget that he will offer you some nice beef for that!



Input

The first line of the input contains a single integer T , indicating the number of test cases ($1 \leq T \leq 50$). Each test case begins with an integer N ($1 \leq N \leq 1000$), the number of cows. In the following N lines, each line contains an integer T_i ($1 \leq T_i \leq 10$), indicating the cycle of the i -th cow, then T_i integers M_j ($0 \leq M_j \leq 250$) follow, indicating the amount of milk it can produce on the j -th day.

Output

For each test case in the input, print a single line containing two integers C , D , indicating the number of cows that will NOT be eaten, and the number of days passed when the last cow is eaten. If no cow is eaten, the second number should be 0.

Sample Input

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1
4
4 7 1 2 9
1 2
2 7 1
1 2
```

Sample Output

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2 6
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