Foxling Feeding Frenzy

You've come across N ($1 \leq N \leq 200$) adorable little Foxlings, and they're hungry! Luckily, you happen to have M ($1 \leq M \leq 200$) crackers on hand, and everyone knows that Foxen love crackers! You'd like to distribute all of your crackers, without splitting any of them, among the Foxlings - but you have to be careful. Foxling i must be fed at least A_i crackers, or it will remain hungry, but no more than B_i of them, or it will become hyper ($1 \leq A_i \leq B_i \leq 200$). You certainly don't want any hungry or hyper Foxlings on your hands, and you're curious as to how many ways this can be accomplished.

There are T ($1 \leq T \leq 100$) scenarios as described above. For each one, you'd like to determine the number of different distributions of your crackers that would satisfy all of the Foxlings, modulo 10^9+7 (as this value can be quite large).

Input

First line: 1 integer, T

For each scenario:

First line: 2 integers, N and M

Next N lines: 2 integers, A_i and B_i, for $i = 1..N$

Output

For each scenario:

Line 1: 1 integer, the number of valid cracker distributions modulo 10^9+7

Example

Input:

```
2
2 5
1 4
2 6
3 5
2 2
2 9
2 3
```

Output:

```
3
0
```

Explanation of Sample:

In the first scenario, you can give either 1, 2, or 3 crackers to the first Foxling, and the remaining

4, 3, or 2 (respectively) to the second.

In the second scenario, each Foxling must receive at least 2 crackers, while you only have 5 to give out, so you have no valid options.