1004.Yet Another Easy Permutation Count Problem

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 5 seconds
Memory limit:	256 megabytes

Silver187 likes Permutation. For a permutation P of length n, a position $x(2 \le x \le n-1)$ is a good position if and only if $\forall 1 \le i \le x-1, P_i < P_x$, and $P_x > P_{x+1}$. In particular:

1. position 1 is a good position if and only if $P_1 > P_2$ and $n \ge 2$.

2. position n can never be a good position.

Silver187 wants to calculate the beauty value of a permutation P of length n. He defines a number S, initially $S = 0$. Silver187 will repeat the following operations for the permutation P until the permutation P is in ascending order.

1. Add to S the number of good positions in the current permutaion P.

2. Do a bubble sort on the permutation P(For each i from 1 to $n-1$ in order, if $P_i > P_{i+1}$, swap P_i, P_{i+1}).

S is the beautiful value of the permutation P.

Silver187 gives you two numbers n and m. There are m constraints. Every constraint will give x and y, which means the inital number of position x is y. Find the sum of the beauty values of all permutations that satisfy all constraints modulo 998244353.

Input

The first line has one integer $T(1 \le T \le 100)$, indicating there are T test cases.

In each case:

The first line contains two integers $n(1 \le n \le 10^6)$, $m(0 \le m \le n)$—the length of the permutation and the number of constraints.

The i-th line of the next m line contains two integers—the i-th constraint.

It is guaranteed that there is at least one permutation that satisfies all constraints.

Input guarantee $1 \le \sum m \le \sum n \le 10^7$.

Output

In each case, output a single integer—the sum of the beautiful values of all permutations that satisfy the constraints modulo 998244353.

Example

standard input	standard output
2 3 1 1 2 7 5 4 5 2 2 6 7 3 3 1 4	3 13