Problem K. Counting

Input file:	standard input
Output file:	standard output
Time limit:	2 seconds
Memory limit:	1024 megabytes

Given three integers N, M, and K, consider all the unlabeled rooted trees with N vertices satisfying that exactly M of these vertices have K children. Let $A(N, M, K)$ be the number of such trees considering the order of each vertex's children.

Formally, two trees are considered different if the degrees of their roots are unequal or there exists a number t such that the subtrees of the t-th child of the two trees are different.

Now you are given an integer N and Q pairs $(M_1, K_1), \cdots, (M_Q, K_Q)$. Find the values of $A(N, M_1, K_1), \cdots, A(N, M_Q, K_Q)$.

Since the result may be large, output the answer modulo 998 244 353.

Input

The first line contains two integers N and Q ($1 \le N \le 10^5$, $1 \le Q \le 10^6$).

The following Q lines contain two integers each; the i-th line contains two integers M_i and K_i. It is guaranteed that $0 \le M_i, K_i \le N$.

Output

Output Q lines; the i-th line contains a single integer — $A(N, M_i, K_i)$ modulo 998 244 353.

Examples

standard input	standard output
1 1 1 0	1
5 10 4 1 0 0 1 2 4 0 1 3 1 4 3 0 3 1 0 5 0 1	1 0 6 1 4 1 6 0 14 3