Tang Hulu

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	512 megabytes

Rilly wants to give Northy some *Tang Hulu* as his birthday gift, and he bought n **different** *Shan Zha Guo*s and m **different** sticks to make some.

First, Rilly numbered the *Shan Zha Guo*s from 1 to n. He has a strange taste for *Tang Hulu*: for two *Shan Zha Guo*s numbered i, j that are adjacent on a *Tang Hulu*, each *Shan Zha Guo* with its index between i and j must be on the same *Tang Hulu* as them and be placed above them.

For example, $[2, 3, 1, 4]$(enumerated from top to bottom) is a valid enumeration of *Shan Zha Guo*s for a *Tang Hulu*, because what's between $3, 1$ is $\{2\}$, and 2 is above 3 and 1, and numbers between $1, 4$ are $\{2, 3\}$, and obviously they are above 1 and 4.

$[1, 4]$ is not valid, since $\{2, 3\}$ is not on it.

$[1, 4, 2, 3]$ is also not, since 3 is between $4, 2$, and it is placed below them.

Assume that all n *Shan Zha Guo*s and m sticks must be used, and each *Tang Hulu* mustn't be empty. Find out how many valid ways there are to make the *Tang Hulu*s. Two ways differ iff there is some stick which is equipped with different enumeration of *Shan Zha Guo*s.

As the number might be large, you only need to print the answer modulo 998244353.

Input

The first line contains an integer $T(1 \le T \le 10^6)$, the number of test cases.

Then T lines follow, each line contains two integers $n, m(1 \le n \le 10^9, 1 \le m \le 10^6)$, respectively denoting the number of *Shan Zha Guo*s and sticks.

It's guaranteed that $\sum m \le 10^6$.

Output

Print a single integer, the answer mod 998244353.

Example

standard input	standard output
1 4 2	24

Note

The valid ways are:

$[1], [2, 3, 4]$	$[2, 3, 4], [1]$	$[1], [3, 2, 4]$	$[3, 2, 4], [1]$
$[1], [3, 4, 2]$	$[3, 4, 2], [1]$	$[1], [4, 3, 2]$	$[4, 3, 2], [1]$
$[1, 2], [3, 4]$	$[3, 4], [1, 2]$	$[1, 2], [4, 3]$	$[4, 3], [1, 2]$
$[2, 1], [3, 4]$	$[3, 4], [2, 1]$	$[2, 1], [4, 3]$	$[4, 3], [2, 1]$
$[1, 2, 3], [4]$	$[4], [1, 2, 3]$	$[2, 1, 3], [4]$	$[4], [2, 1, 3]$
$[2, 3, 1], [4]$	$[4], [2, 3, 1]$	$[3, 2, 1], [4]$	$[4], [3, 2, 1]$