Hide & Seek

Assignment 2
Computer Programming
Due date: 12 October, 2018

Problem Statement: Chandu is a good boyfriend, he is planning a surprise birthday party for his girlfriend. Many boys are jealous of Chandu and are eager to spoil his plan. The moment any of them sees her in the campus they will leak his whole plan. Chandu wants to hide her from the other people till her birthday.
She could be present in any of the N different places and each place is a n[i] x m[i] rectangular grid (without border). To protect her, he has to place a rectangular wall around her which makes her invisible to other people. The wall can be of any size and anywhere, as long as it encloses the girl within. It's enough to enclose the girl within any sized border that will be sufficient to protect her.
Every place is of different dimension and since she could be present anywhere so he has to think of all possible ways to safegaurd her.
So he wants to know the number of ways to build that wall so no one can see her.

Input
The first line comprises of one integer T denoting the number of test-cases.
Next line has two integers N denoting the number of places and MOD, since the answer can be very large you have to print the modulo of the answer.
Next N lines consists of two integers 'n' and 'm' which represents the size of the grid of the nth place.

Output
For every test case output the answer on new line.

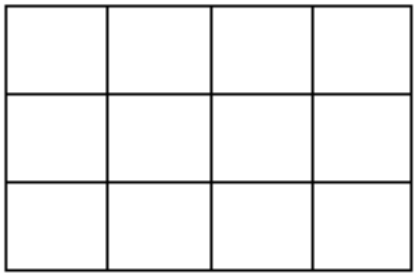
Constraints
$1 \leq T \leq 10$
$1 \leq N \leq 10^5$
$1 \leq MOD \leq 10^{16}$
$1 \leq n \leq 10^{16}$
$1 \leq m \leq 10^{16}$

Time Limit: 2 sec
Memory Limit: 256 MB

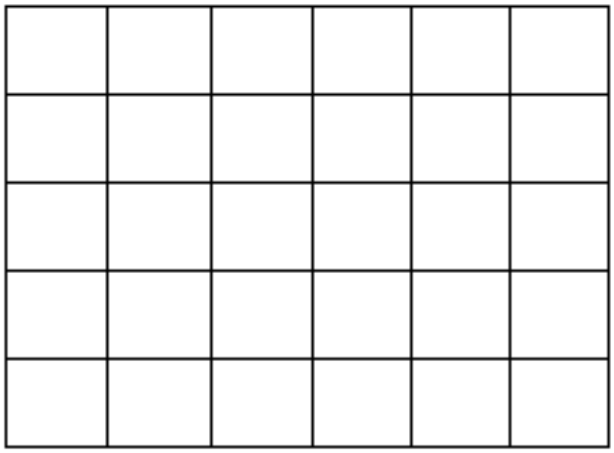
Sample Test Case

Input	Output
2 2 123 3 4 5 6 1 55555555555 987654321 123456789	81 23287431455

N = 1 (3 X 4)



N = 2 (5 X 6)



Explanation
Case#1:
For $N = 1$, the number of ways to make a rectangle of any size = 60.
For $N = 2$, the number of ways to make a rectangle of any size = 315
Total possibilities: 18900
Answer: 18900 mod 123 = 81