SPOJ Problem Set (classical)

11830. DOJO Corridor I

Problem code: DOJ1

There's a long rectangular corridor in the hall's dojo, one place is already taken by a magic hanjo (1×1 square). You have to put tatamis (1×2 rectangle) in order to cover exactly the rest of the corridor. Sometimes it's possible, sometimes not!

Input

The input begins with the number T of test cases in a single line. In each of the next T lines there are integer numbers : N, M the size of the corridor, I,J coordinates of magic hanjo, and K the modulo for the output.

Output

For each test case, print the number of possibility to do the job, modulo K.

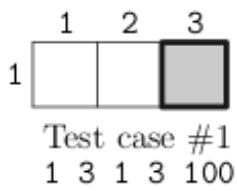
Example

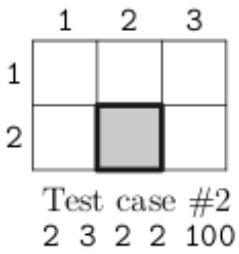
Input:

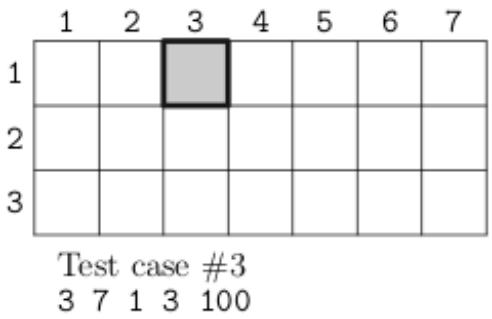
```
3
1 3 1 3 100
2 3 2 2 100
3 7 1 3 100
```

Output:

```
1
0
56
```







Constraints

1 <= T <= 30000

1 <= N <= 4

1 <= M <= 10^9

1 <= I <= N

1 <= J <= M

1 <= K <= 10^9

Uniform, independant, random input in the range.

Time limit is set to allow one half kB of python3 code to get AC.

Added by:	Francky
Date:	2012-07-06
Time limit:	3s
Source limit:	50000B
Languages:	All
Resource:	Own problem