
Game of rectangles

P66768_en

Desè Concurs de Programació de la UPC - Final (2012-09-15)

Consider a two-player game with n rectangles. Initially, each rectangle i has r_i rows and c_i columns. Alternating moves, each player chooses any rectangle i (that has not been fully removed yet), and removes the top row or the left column from it, thus reducing the size to either $(r_i - 1) \times c_i$ or $r_i \times (c_i - 1)$, respectively. The player that eventually cannot make any move loses the game.

Please write a program that tells if, with perfect play, the first player can win a given game.

Input

Input consists of several cases. Every case begins with the number of rectangles n , followed by n pairs of integer numbers r_i and c_i . Assume $1 \leq n \leq 10^5$ and $1 \leq r_i, c_i \leq 10^9$.

Output

For every case, print "wins" or "loses".

Sample input

```
1 1 5
1 2 2
1 5 9
1 5 4
2 1 5 5 4
2 1 6 5 4
3 1000000000 1 999999999 2 999999996 999999998
```

Sample output

```
wins
loses
loses
wins
loses
wins
loses
```

Problem information

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