The Least Possible Effort

For since the fabric of the universe is most perfect and the work of a most wise Creator, nothing at all takes place in the universe in which some rule of maximum or minimum does not appear.
Leonhard Euler

Background

The Knight's tour is a classic chess problem which was studied (and probably solved) over 1000 years ago. The problem is, from an arbitrary starting position, move a Knight chess piece around a chessboard visiting all other squares on the board exactly once.

1	60	15	24	47	36	13	26
16	23	64	59	14	25	38	35
63	2	61	46	37	48	27	12
22	17	56	49	58	51	34	39
3	62	21	52	45	40	11	28
18	55	44	57	50	31	8	33
43	4	53	20	41	6	29	10
54	19	42	5	30	9	32	7

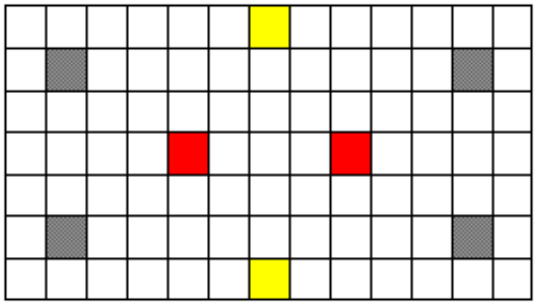
A related problem is to find all starting positions that get us to a solution. For instance, in the chessboard above you can get a solution starting at the position numbered with 1 as well as 26, 54 and 7 (due to symmetry).

This problem is more interesting if the board is not necessarily a square.

The Problem

Given a grid of n rows and m columns representing a board, $6 \leq n, m \leq 10000$, find the minimum number of starting positions you must examine, such that we can find all the solutions for the Knight's tour.

For example, in the grid:



the cells with the same color represent one cell and its symmetric ones; so we can examine only one cell of each color.

The Input

The first line of the input contains an integer, t, indicating the number of test cases. For each test case, there is a line with two numbers separated by blanks, $6 \leq n, m \leq 10000$, that is, the size of the board (n rows and m columns).

The Output

For each test case, the output should consist of one line showing the minimum number of starting positions needed to find all the solutions of the Knight's tour.

Sample Input

```
3
6 9
15 10
7 13
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Sample Output

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15
40
28
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