UVa Online Judge

13198 Knight on Wide Board

A knight can move in any one of 8 directions (see diagram above on the right).

A knight's tour is a succession of moves made by a knight that traverses every square on an $M \times N$ chessboard once and only once. A closed knight's tour is one in which the knight's last move in the tour places it a single move away from where it started.

See example below (follow the numbers in increasing order to trace the path).

26	29	2	21	8	23	6	17	14	11
	20	27	24	3	18	9	12	5	16
28	25	30	19	22	7	4	15	10	13

In this problem you will count the number of *closed* knight tours.

Input

A number of inputs (≤ 1000), each line with N and M ($0 < N < 5$, $1 \leq M \leq 1000000000$).

Output

Output one line per input, the number of closed knight tours *modulo* 1000000007.

Sample Input

```
1 2
3 10
```

Sample Output

```
0
16
```