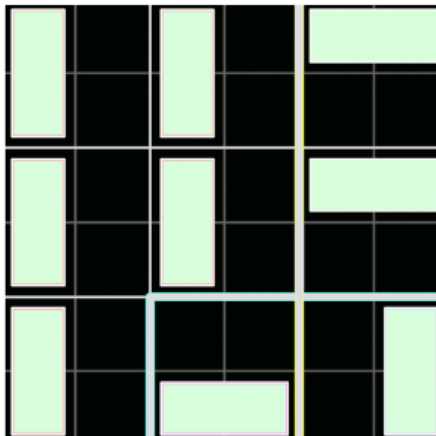


A domino is a  $1 \times 2$  or  $2 \times 1$  Tile. Determine in how many ways exactly  $N^2$  dominoes can be placed without overlapping on an  $(2M) \times (2N)$  chessboard, such that every  $2 \times 2$  square contains at least two uncovered unit squares which lie in the same row or column. One possible tiling is shown below:



## Input

A number of inputs ( $\leq 1000$ ), with space separated integers  $N, M$  ( $1 \leq M, N \leq 1000000$ ), each on one line.

## Output

Output one line per input, the answer *modulo* 10000000007.

## Sample Input

```
1 1
2 2
```

## Sample Output

```
4
36
```