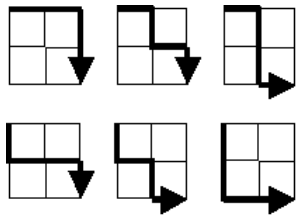
Project Euler #15: Lattice paths

This problem is a programming version of Problem 15 from projecteuler.net

Starting in the top left corner of a 2×2 grid, and only being able to move to the right and down, there are exactly 6 routes to the bottom right corner.



How many such routes are there through a $N \times M$ grid? As number of ways can be very large, print it modulo $(10^9 + 7)$.

Input Format

The first line contains an integer T , i.e., number of test cases.
Next T lines will contain integers N and M.

Constraints

- $1 \leqslant T \leqslant 10^3$
- $1 \leqslant N \leqslant 500$
- $1 \leqslant M \leqslant 500$

Output Format

Print the values corresponding to each test case.

Sample Input

```
2
2 2
3 2
```

Sample Output

```
6
10
```

Explanation

For 2×2 as shown in statement above.