

## 6736 Army Formation

A key element of war strategy is the arrangement of your armies on the battlefield. Each soldier in the Pandava army specializes in exactly one of  $M$  possible specializations (archery/infantry/cavalry to name a few). They have decided to choose a 2-rows  $N$ -columns ( $2 \times N$ ) formation for their army. Now, it is a good thing to ensure that each person's specialization complements those in his row and his column. They wish their army formation to have no two soldiers in the same row or same column having the same specialization. Can you help them by finding the number of ways in which this can be achieved?

### Input

The first line contains  $T$ , the number of test cases. The description of  $T$  test cases follow. Each test is described by a single line containing 2 space separated integers, denoting  $N$  and  $M$ .

### Output

For each test case, output a single line containing the number of ways in which the Pandavas can form their army. Since the numbers may be large, output all answers *modulo* 1000000007.

### Constraints:

$1 \leq N, M \leq 1000$

### Sample Input

```
3
1 1
2 2
2 3
```

### Sample Output

```
0
2
18
```