杭电2011和2012级同学如何加

Divide Chocolate

Time Limit: 2000/1000 MS (Java/Others) Memory Limit: 32768/32768 K (Java/Others)
Total Submission(s): 1153 Accepted Submission(s): 553

Problem Description

It is well known that claire likes dessert very much, especially chocolate. But as a girl she also focuses on the intake of calories each day. To satisfy both of the two desires, claire makes a decision that each chocolate should be divided into several parts, and each time she will enjoy only one part of the chocolate. Obviously clever claire can easily accomplish the division, but she is curious about how many ways there are to divide the chocolate.

To simplify this problem, the chocolate can be seen as a rectangular contains n*2 grids (see above). And for a legal division plan, each part contains one or more grids that are connected. We say two grids are connected only if they share an edge with each other or they are both connected with a third grid that belongs to the same part. And please note, because of the amazing craft, each grid is different with others, so symmetrical division methods should be seen as different.

Input

First line of the input contains one integer indicates the number of test cases. For each case, there is a single line containing two integers n (1<=n<=1000) and k (1<=k<=2*n).n denotes the size of the chocolate and k denotes the number of parts claire wants to divide it into.

Output

For each case please print the answer (the number of different ways to divide the chocolate) module 100000007 in a single line.

Sample Input

```
2
2 1
5 2
```

Sample Output

```
1
45
```

Author

BUPT

Source

2012 Multi-University Training Contest 1

Recommend

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