TRKNIGHT – Travelling Knight

Source: http://www.spoj.com/problems/TRKNIGHT/

Your task is simple. A knight is placed on the top left corner of a chessboard having 2n rows and 2n columns. In how many ways can it move such that it ends up at a corner after atmost K moves ?

Input

The first line contains T the number of test cases. Each of the next T lines contain 2 integers : n,k

$2 <= n <= 12,\ 1 <= k <= 10^9$

Output

Output T lines, one for each test case, containing the required total number of configurations. Since the answers can get very big, output the answer modulo 1000007.

Sample Input

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

Sample Output

```
1
5
7
```