N-Queens Count

The Problem

Implement the enumeration of the N-Queens problem and count how many legal permutations there are for placing N queens on an N by N chess board.

The Input

Each line of input contains a single integer N, $(0 \le N \le 14)$. Input terminates when N = 0.

The Output

For each data set there is one line of output. Use the format shown below.

Sample Input	Sample Output
4	N=4: 2 permutations
5	N=5: 10 permutations
0	