# 1903 - I2P(II)Yang_Winter_Vacation_Homework_2020

Scoreboard (/contest/scoreboard/1903/)

(/contest/edit/1903/)

Time

2020/01/20 00:00:00 32days, 08:29:48 2020/02/22 00:00:00

Clarification

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Clarify

Overview Problem

# 12604 - N-Queens M-Rooks Problem

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## Description

N queens problem asks how many ways to place N non-attacking queens on an N×N chessboard.

For example, there're 2 solutions for N = 4:
( 0 means empty spot, Q means queen. )

```
0 Q 0 0     0 0 Q 0
0 0 0 Q     Q 0 0 0
Q 0 0 0     0 0 0 Q
0 0 Q 0     0 Q 0 0
```

While, there's no solution for N = 2:
Below is the all placements. All of them contains queens threaten each other.

```
Q Q    Q 0    Q 0    0 Q    0 Q    0 0
0 0    Q 0    0 Q    Q 0    0 Q    Q Q
```

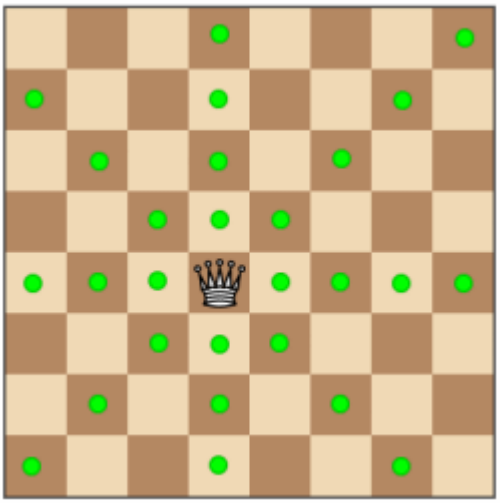
Let's define a new problem "N-Queens M-Rooks Problem".
It asks how many ways to place $N$ queens and $M$ rooks on an $(N+M)\times(N+M)$( chessboard such that no two of queens or rooks can attack each other in 1 step.

For N = 1, M = 2, there're 4 solutions:
( 0 means empty spot, Q means queen, R means rook. )

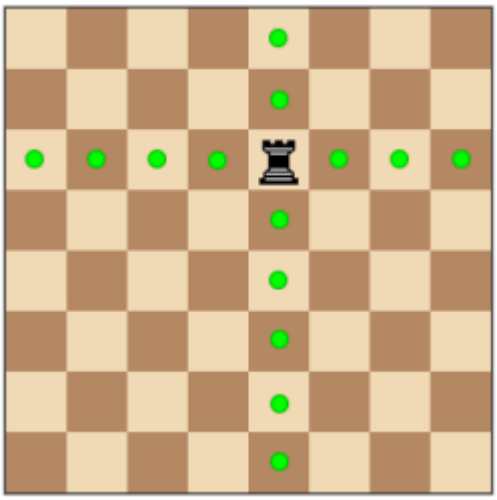
```
Q 0 0    0 R 0
0 0 R    R 0 0
0 R 0    0 0 Q

0 R 0    0 0 Q
0 0 R    R 0 0
Q 0 0    0 R 0
```

Possible move of Queen:



Possible move of Rook:



# Input

There're multiple testcases.

Each testcase is consisted of 2 integers $N$,$M$ on one line.

It's guaranteed that:

- $0 \leq N, M \leq 9$
- $1 \leq N+M \leq 9$

# Output

Print the number of solution for N-Queens M-Rooks Problem for every testcase.
Remember '\n' on the end of line.

# Sample Input

Download (data:text/plain;charset=utf-8,0%205%0D%0A5%200%0D%0A1%202)

```
0 5
5 0
1 2
```

# Sample Output

Download (data:text/plain;charset=utf-8,120%0D%0A10%0D%0A4)

```
120
10
4
```

## Discuss