Problem Solving Techniques 문제해결

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Exercise D

- **5 points**
  - The exercise is not evaluated in detail but evaluated as Pass/Fail.
  - (Note that each homework will be about 100 points.)

- **Why 5 points?**
  - I want all students to solve this exercise to participate in-class discussion for the exercise.

- **Report submission (no code submission)**
  - Due date: 4/19 23:59 (no late submission accepted)
  - Submission site: https://icampus.skku.edu/
  - Submission format: [Template] Report for exercise/homework
    - File name: yourid_EX_D.pdf
      - Example: 2000123456_EX_D.pdf

Exercise D

- **Little bishops**
  - A bishop is a piece used in the game of chess which can only move diagonally from its current position. Two bishops attack each other if one is on the path of the other. In the figure below, the marks (V) represent the reachable locations for bishop $B1$ from its current position. Bishops $B1$ and $B2$ are in attacking position, while $B1$ and $B3$ are not. Bishops $B2$ and $B3$ are also in non-attacking position.
  - Given two numbers n and k, determine the number of ways one can put k bishops on an $n \times n$ chessboard so that no two of them are in attacking positions.

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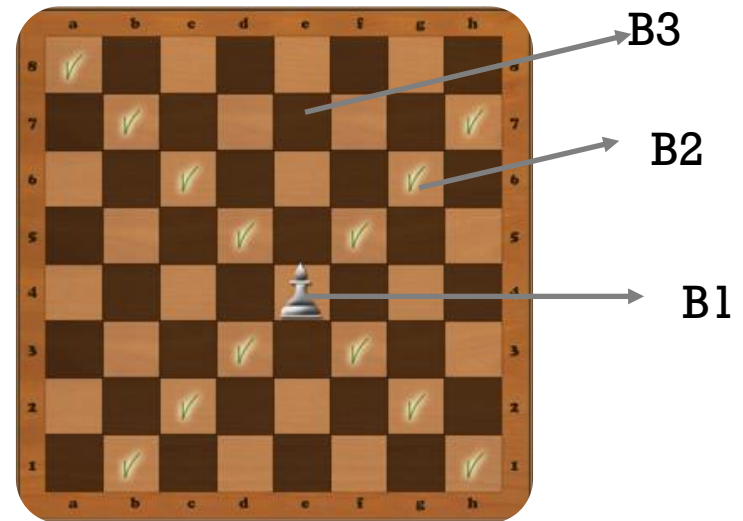
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- Example of n=2, k=2
  - Answer: 4
  - Why?

- Example of n=3, k=2
  - Answer: 6+5+4+…

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Input

- The input file may contain multiple test cases. Each test case occupies a single line in the input file and contains two integers $n(1 \leq n \leq 8)$ and $k(0 \leq k \leq n^2)$.

- A test case containing two zeros terminates the input.

Output

- For each test case, print a line containing the total number of ways one can put the given number of bishops on a chessboard of the given size so that no two of them lie in attacking positions. You may safely assume that this number will be less than 10^{15}.

Exercise D

Sample input

8 6
4 4
0 0

Sample output

5599888
260