# Pattern locks (`pattern`)

Some pupular smartphones offer authentication mechanisms based on gestures where previously recorded patterns have to be reproduced to unlock the phone.

The picture on the right shows pattern locks, i.e., sequences of moves, of length 5 (left) and 9 (right).

You are to write a program that computes the number of possible pattern locks of length *up to K* that can be realized on a 3×3 grid.
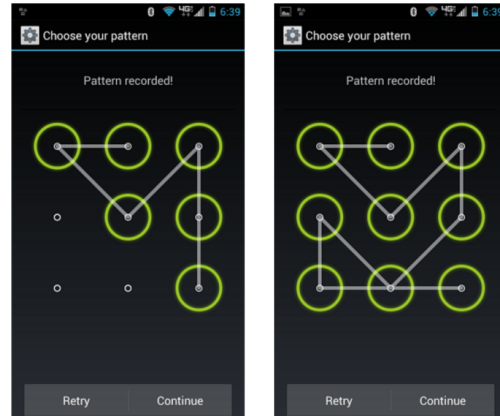
Implementation

You should submit a single file, with either a `.c`, `.cpp`, `.java` or `.py` extension.

Your program must read input data from `stdin` and write the output data into `stdout`.

`stdin` consists of only one line:

- Line 1: The integer K, the maximum length of a pattern lock.

`stdout` consists of only one line:

- Line 1: The integer represents the number of pattern locks of length up to K.

Constraints

- $1 \leq K \leq 12$.

Scoring

Your program will be tested on a number of testcases grouped in subtasks. In order to obtain the score associated to a subtask, you need to correctly solve all testcases of which it is formed.

- **Subtask 1**   [**50 points**]: $K \leq 6$.
- **Subtask 2**   [**50 points**]: $K \leq 12$.

Examples

stdin	stdout
1	40
2	240
3	1192