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Chef and squares

Problem Code: **CHSQR**[Tweet](#) [Like](#) [Share](#) Sign Up to see what your friends like.

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Chef has finished his freshman year in college. As a present, his parents gave him a new problem to solve:

Chef has to fill a $K \times K$ square grid of integers in a certain way. Let us say that such a grid is *valid* if:

- Each cell contains an integer from **1** and K (inclusive).
- No integer appears twice in the same row or the same column.

Let $F(K)$ be maximum possible distance between the center of the square and the closest cell that contains **1**, among all possible squares with the side length K .

Here, we use the following notions:

- The distance between cell (x, y) and (i, j) is equal to $|x-i|+|y-j|$.
- The center of a $K \times K$ square is cell $((K+1)/2, (K+1)/2)$ for odd K .

Input

The first line of input contains a single integer T denoting the number of test cases. Each test case consists of a single line containing a single odd integer K .

Output

For each test case, print K lines each consisting of K space separated integers giving some square grid where the distance from the center of the grid to the nearest **1** is exactly $F(K)$. If there's more than 1 possible answer output any of them.

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Subtask #1 (10 points) :

- $1 \leq T \leq 50$
- $1 \leq K_i \leq 5$

Subtask #1 (90 points) :

- $1 \leq T \leq 10$
- $1 \leq K_i < 400$

Example

Input :

2
1
3

Output :

1
3 2 1
1 3 2
2 1 3

Author:

4★ [fiter](#)

Tester:

6★ [xcwgf666](#)

Editorial:

<http://discuss.codechef.com/problems/CHSQR>

Tags:

[basic-prog](#), [fiter](#), [nov16](#), [simple](#)

Date Added: 11-07-2016

Time Limit: 1 secs

Source Limit: 50000 Bytes

Languages: C, CPP14, JAVA, PYTH, PYTH 3.5, PYPY, CS2, PAS fpc, PAS gpc, RUBY, PHP, GO, NODEJS, HASK, SCALA, D, PERL, FORT, WSPC, ADA, CAML, ICK, BF, ASM, CLPS, PRLG, ICON, SCM qobi, PIKE, ST, NICE, LUA, BASH, NEM, LISP sbcl, LISP clisp, SCM guile, JS, ERL, TCL, PERL6, TEXT, SCM chicken, CLOJ, FS

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Intelligent People. Uncommon Ideas.
The time now is: 08:10:41 AM
Your IP: 169.54.6.221

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CodeChef was created as a platform to help programmers make it big in the world of algorithms, **computer programming** and **programming contests**. At CodeChef we work hard to revive the geek in you by hosting a **programming contest** at the start of the month and another smaller programming challenge in the middle of the month. We also aim to have training sessions and discussions related to **algorithms**, **binary search**, technicalities like **array size** and the likes. Apart from providing a platform for **programming competitions**, CodeChef also has various algorithm tutorials and forum discussions to help those who are new to the world of **computer programming**.

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