Chef and squares

Problem Code: **CHSQR**

All submissions for this problem are available.

Read problems statements in Mandarin Chinese, Russian and Vietnamese as well.

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 x 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 x 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.

Constraints

- K_i is odd.

All Submissions

Successful Submissions +

Subtask #1 (10 points) :

- **$1 \le T \le 50$**
- **$1 \le K_i \le 5$**

Subtask #1 (90 points) :

- **$1 \le T \le 10$**
- **$1 \le K_i < 400$**

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

Comments

CodeChef - A Platform for Aspiring Programmers

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**.

Practice Section - A Place to hone your 'Computer Programming Skills'

Try your hand at one of our many practice problems and submit your solution in a language of your choice. Our **programming contest** judge accepts solutions in over 35+ programming languages. Preparing for coding contests were never this much fun! Receive points, and move up through the CodeChef ranks. Use our practice section to better prepare yourself for the multiple **programming challenges** that take place through-out the month on CodeChef.

Compete - Monthly Programming Contests and Cook-offs

Here is where you can show off your **computer programming skills**. Take part in our 10 day long monthly coding contest and the shorter format Cook-off **coding contest**. Put yourself up for recognition and win great prizes. Our **programming contests** have prizes worth up to INR 20,000 (for Indian Community), $700 (for Global Community) and lots more CodeChef goodies up for grabs.

Programming Tools	Practice Problems	Initiatives
Online IDE	Easy	Go for Gold
Upcoming Coding Contests	Medium	CodeChef for Schools
Contest Hosting	Hard	Campus Chapters
Problem Setting	Challenge	
CodeChef Tutorials	Peer	
CodeChef Wiki	School	
	FAQ's	