

The well-known magician David Copperfield loves to show the following trick: a square with  $N$  rows and  $N$  columns of different pictures appears on a TV screen. Let us number all the pictures in the following order:

1	2	...	$N$
$\vdots$	$\vdots$	$\ddots$	$\vdots$
$N * (N - 1) + 1$	$N * (N - 1) + 2$	...	$N * N$

Each member of the audience is asked to put a finger on the upper left picture (i.e., picture number one) and The Magic begins: the magician tells the audience to move the finger  $k_1$  times through the pictures (each move is a shift of the finger to the adjacent picture up, down, left or right provided that there is a picture to move to), then with a slight movement of his hand he removes some of the pictures with an exclamation “*You are not there!*”, and ... it is true - your finger is not pointing to any of the pictures removed. Then again, he tells the audience to make  $k_2$  moves, and so on. At the end he removes all the pictures but one and smiling triumphantly declares, “*I’ve caught you*” (applause).

Just now, David is trying to repeat this trick. Unfortunately, he had a hard day before, and you know how hard to conjure with a headache. You have to write a program that will help David to make his trick.

## Input

The input begins with a single positive integer on a line by itself indicating the number of the cases following, each of them as described below. This line is followed by a blank line, and there is also a blank line between two consecutive inputs.

Each test case consists of a single integer number number  $N$  ( $2 \leq N \leq 100$ ).

## Output

For each test case, the output must follow the description below. The outputs of two consecutive cases will be separated by a blank line.

Your program should write the following lines with numbers to the output file:

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 $k_1$   $x_{1,1}$   $x_{1,2}$  ...  $x_{1,m_1}$ 
 $k_2$   $x_{2,1}$   $x_{2,2}$  ...  $x_{2,m_2}$ 
...
 $k_e$   $x_{e,1}$   $x_{e,2}$  ...  $x_{e,m_e}$ 

```

where  $k_i$  is a number of moves the audience should make on the  $i$ -th turn ( $2N \leq k \leq 10000$ ). All  $k_i$  should be different (i.e.  $k_i \neq k_j$  when  $i \neq j$ ).  $x_{i,1}, x_{i,2}, \dots, x_{i,m_i}$  are the numbers of the pictures David should remove after the audience will make  $k_i$  moves (the number of the pictures removed is arbitrary, but each picture should be listed only once, and at least one picture should be removed on each turn).

A description of the every next turn should begin with a new line. All numbers on each line should be separated by one or more spaces. After  $e$  iterations, all pictures except one should be removed.

## Sample input

1

3

## Sample Output

```

8      4 6
13     9
10     7 1
7       8
11     3 5

```