

An $N \times N \times N$ magic cube is a cube composed of N^3 consecutive integers (usually 1 through N^3) arranged in such way that each row, each column, each main diagonal of the square cross sections, and each of the four triagonals containing N integers adds up to the same sum. Though it is not easy to construct a magic cube when N is even, there is a very simple approach for constructing one when N is odd.

To construct an odd order magic cube, start by placing the integer 1 at the center of the bottom layer of the cube (Fig. 2). Then proceed diagonally down to the right along the central vertical square cross section (the shaded vertical plane in Fig. 2), and keep placing consecutive integers in every empty location you visit. When you run off the bottom of the plane, you reenter at the top. When you run off the right-hand side, you reenter on the left-hand side.

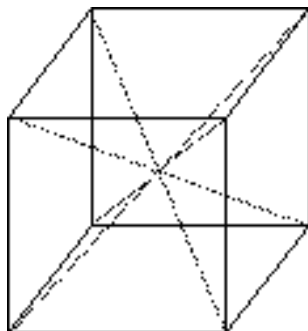


Fig. 1: Triagonals(dotted lines)

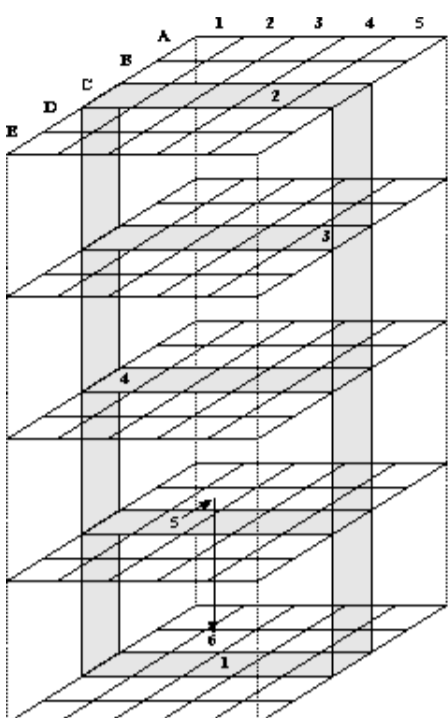


Fig. 2: The “one back and one down” move

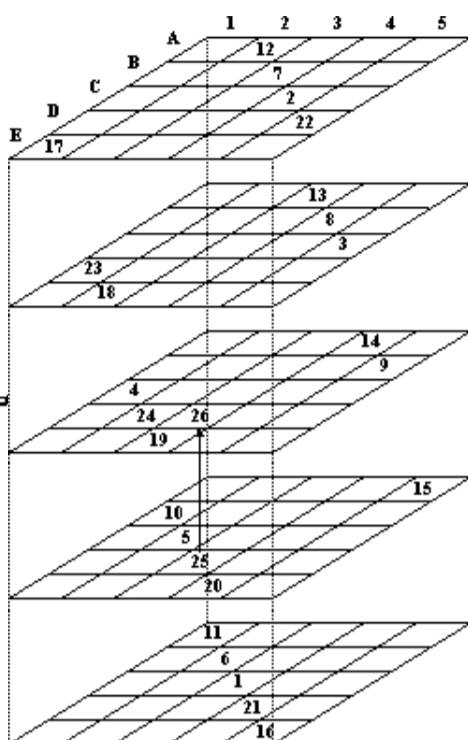
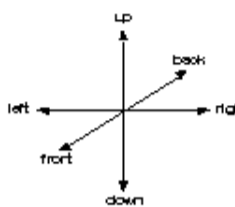


Fig. 3: The “up one” move

Every time you find a non-empty location on your way, just go back one layer and down one, as shown in Fig. 2 for the move from 5 to 6. Continue to proceed diagonally in the new plane, repeating the “one back and one down” step as required. If the “one back and one down” step does not work, i.e., you still arrive at a non-empty location, just go up one layer and continue moving diagonally. The “up one” step is shown in Fig. 3 for the move from 25 to 26.

Input

The input may contain multiple test cases. Each line of the input contains an odd integer N ($1 \leq N \leq 25$) giving the dimension of the cube.

Input is terminated by a zero. This zero should not be processed.

Output

For each test case in the input output the corresponding magic cube as follows. First print the numbers in the top layer of the cube, followed by numbers in the second layer, then the numbers in the third layer, and so on. For each layer first print the numbers in row **A** (see Fig. 2 and Fig. 3) on one line from left to right (A_1 to A_N), followed by the numbers in row **B** on the next line, then row **C** on the third line, and so on. Print each number right aligned on a field of width 5, and separate two successive such fields on the same line by a white space character. Print a blank line between two successive layers.

Separate the output for every two successive test cases by a blank line.

Sample Input

```
3
5
0
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Sample Output

```

21   5  16
13  27   2
 8  10  24

17  19   6
 3  14  25
22   9  11

 4  18  20
26   1  15
12  23   7

110  12  44  71  78
 98 105   7  39  66
 61  93 125   2  34
 29  56  88 120  22
 17  49  51  83 115

 79 106  13  45  72
 67  99 101   8  40
 35  62  94 121   3
 23  30  57  89 116
111  18  50  52  84

 73  80 107  14  41
 36  68 100 102   9
  4  31  63  95 122
117  24  26  58  90
 85 112  19  46  53

 42  74  76 108  15
 10  37  69  96 103
123   5  32  64  91
 86 118  25  27  59
 54  81 113  20  47

 11  43  75  77 109
104   6  38  70  97
 92 124   1  33  65
 60  87 119  21  28
 48  55  82 114  16
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