Problem F. Fast Travel Coloring

Input file:	*standard input*
Output file:	*standard output*
Time limit:	2 seconds
Memory limit:	256 mebibytes

You are given a complete undirected graph with $7n$ vertices (here n is a positive integer). Your task is to paint its edges in n colors in such a way that for each pair of vertices and each color there is a path of at most two edges of this color connecting this pair of vertices. More formally, for each pair of vertices u, v and each color c at least one of the two options should hold:

- the edge between u and v has color c;
- there is a vertex w that both edges (u, w) and (w, v) have color c.

Input

The only line of input contains a positive integer n ($7 \le 7n \le 1000$).

Output

Let us number the colors from 1 to n. Let $c_{i,j}$ be 0 if $i = j$, and the color of the edge (i, j) in your coloring otherwise (in particular, in this case $c_{i,j} = c_{j,i}$). Print $c_{i,j}$ in $7n$ lines containing $7n$ numbers each.

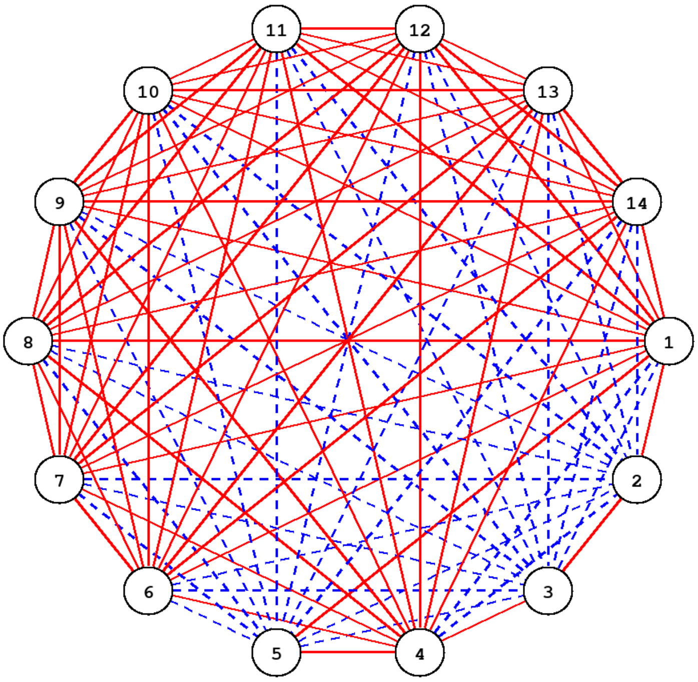
It is guaranteed that a solution exists.

Examples

standard input	standard output
1	0 1 1 1 1 1 1 1 0 1 1 1 1 1 1 1 0 1 1 1 1 1 1 1 0 1 1 1 1 1 1 1 0 1 1 1 1 1 1 1 0 1 1 1 1 1 1 1 0
2	0 1 2 2 1 1 1 1 1 1 1 1 1 1 1 0 1 2 2 2 2 2 2 2 2 2 2 2 2 1 0 1 2 2 2 2 2 2 2 2 2 2 2 2 1 0 1 1 1 1 1 1 1 1 1 1 1 2 2 1 0 2 2 2 2 2 2 2 2 2 1 2 2 1 2 0 1 1 1 1 1 1 1 1 1 2 2 1 2 1 0 1 1 1 1 1 1 1 1 2 2 1 2 1 1 0 1 1 1 1 1 1 1 2 2 1 2 1 1 1 0 1 1 1 1 1 1 2 2 1 2 1 1 1 1 0 1 1 1 1 1 2 2 1 2 1 1 1 1 1 0 1 1 1 1 2 2 1 2 1 1 1 1 1 1 0 1 1 1 2 2 1 2 1 1 1 1 1 1 1 0 1 1 2 2 1 2 1 1 1 1 1 1 1 1 0

Note

The second sample test corresponds to the following coloring:



Here are two separate subgraphs for both colors: