

Problem J. Jagermeister

Input file: *standard input*
Output file: *standard output*
Time limit: 1 second
Memory limit: 256 mebibytes

Girth of an undirected graph is defined as the length of its shortest simple cycle.

A graph is *k-regular* if each of its vertices has degree equal to k .

You are given a prime number p . Construct a $(p + 1)$ -regular graph with girth no less than 6 having the minimal possible number of vertices.

Input

The only line of input contains a prime number p ($2 \leq p \leq 47$).

Output

On the first line of output, print one integer N : the number of vertices in the graph.

On each of the next N lines, print $p + 1$ space-separated integers. The i -th line must contain the list of neighbors of vertex i . Vertices are enumerated starting from 1.

The described graph must have girth at least 6 and must not contain any loops or multiple edges. The value of N must be minimal possible among all such graphs. If there are several possible answers, output any one of them.

Example

standard input	standard output
2	14 7 10 11 5 6 10 5 7 14 9 10 14 2 3 12 2 8 13 1 3 8 6 7 9 4 8 12 1 2 4 1 12 13 5 9 11 6 11 14 3 4 13