

Geo Sharding

Input file: **standard input**
Output file: **standard output**
Time limit: **3 seconds**
Memory limit: **512 megabytes**

For a given integer n , you must color each cell of an $n \times n$ grid into one of $C = 10 + \lfloor \frac{n^2}{100} \rfloor$ colors. Each specific color could be used at most 150 times.

For each cell (r, c) , the set of colors used in cells (r_i, c_i) where $(r - r_i)^2 + (c - c_i)^2 \leq 100$, should contain **at most 8 different colors**.

Input

The only line contains a single integer n ($1 \leq n \leq 1000$) — the grid size.

Output

Print n lines with n integers $1 \leq a_{r,c} \leq C$ in each.

Example

standard input	standard output
3	1 2 3 4 5 6 7 8 8