Target

Mouse Stefanie likes to throw around things. Stofl wants to give her some targets for her birthday so she can practise throwing stuff.

Targets have a 0 in the center and on each outer field they have the distance to the center. See the samples on how this might look.

Input

One integer n, the radius of the target.

Output

Print the target.

Limits

There are 7 test groups.

- In test group 1 for 10 points: $n = 0$.
- In test group 2 for 10 points: $n = 1$.
- In test group 3 for 10 points: $n = 2$.
- In test group 4 for 10 points: $n = 3$.
- In test group 5 for 10 points: $n = 4$.
- In test group 6 for 20 points: $5 \leq n \leq 9$.
- In test group 7 for 30 points: $10 \leq n \leq 100$.

Examples

Input	Output
4	4 4 4 4 4 4 4 4 4
	4 3 3 3 3 3 3 3 4
	4 3 2 2 2 2 2 3 4
	4 3 2 1 1 1 2 3 4
	4 3 2 1 0 1 2 3 4
	4 3 2 1 1 1 2 3 4
	4 3 2 2 2 2 2 3 4
	4 3 3 3 3 3 3 3 4
	4 4 4 4 4 4 4 4 4

Input	Output
1	1 1 1
	1 0 1
	1 1 1