

MUSEUM

The Plovdiv Museum of Modern Art has an exhibition of ancient Thracian vases. There are N vases total. The first one is a miniature of height 1 centimeter. The second one is of height 2 centimeters; the third one is 3 centimeters tall and so on until the N^{th} vase, which is N centimeters tall.

Since this a modern art museum and the vases are ancient, the organizers of the exhibition would like to add a modern, chaotic twist to the presentation of the vases. They have decided to arrange the vases in a line that satisfies the following condition: For any three vases A , B and C , such that B 's height is exactly the average of the heights of A and C , either B must be positioned to the left of both A and C , or B must be positioned to the right of both A and C (in other words, B may not be positioned between A and C on the line).

TASK

Write a program that, given the number of vases, determines a linear arrangement of the vases that satisfies the condition of the exhibition organizers.

CONSTRAINTS

$1 \leq N \leq 2,000$ The number of vases

INPUT

You are given five problem instances in the files `museum.1.in` to `museum.5.in`. Each file contains a single line, which in turn contains a single integer: the number of vases N .

OUTPUT

You are to submit five output files, named `museum.1.out` to `museum.5.out`, each corresponding to one of the input files. The files should be in the following format:

There should be N lines, each representing the N positions in the arrangement, in order from left to right. Line k should contain a single integer H_k , the height of the vase you decided to place on position k . All N heights should be distinct integers between 1 and N inclusive.

EXAMPLE

Sample Input museum.0.in	Sample Output museum.0.out
5	3 1 2 5 4

In the above arrangement, 3 is neither between 2 and 4, nor is it between 1 and 5. Also, 2 is not between 1 and 3, and 4 is not between 3 and 5. Thus, it satisfies the condition of the exhibition organizers.