

Big Sort

You are given a large amount of integers, not necessarily distinct. Please sort them in non-decreasing order, and print the elements. You can refer to the lecture slides, if you want.

Input

Your input consists of an arbitrary number of records, but no more than 5.

Each record starts with a line containing an integer n ($1 \leq n \leq 100,000$), the number of integers. The next line contains n integers a_1, a_2, \dots, a_n ($-10^9 \leq a_i \leq 10^9$), which are the integers that your program needs to sort.

The end of input is indicated by a line containing only the value -1 .

Output

For each input record, print a_1, a_2, \dots, a_n in non-decreasing order in a line, each separated by a space.

Example

Standard input	Standard output
3	1 3 5
5 3 1	-3 -1 2 4
4	1
-1 2 -3 4	
1	
1	
-1	

Time Limit

1 second.