

## A. Array

time limit per test: 2 seconds  
 memory limit per test: 256 megabytes  
 input: standard input  
 output: standard output

Vitaly has an array of  $n$  distinct integers. Vitaly wants to divide this array into three **non-empty** sets so as the following conditions hold:

1. The product of all numbers in the first set is less than zero ( $< 0$ ).
2. The product of all numbers in the second set is greater than zero ( $> 0$ ).
3. The product of all numbers in the third set is equal to zero.
4. Each number from the initial array must occur in exactly one set.

Help Vitaly. Divide the given array.

### Input

The first line of the input contains integer  $n$  ( $3 \leq n \leq 100$ ). The second line contains  $n$  space-separated distinct integers  $a_1, a_2, \dots, a_n$  ( $|a_i| \leq 10^3$ ) — the array elements.

### Output

In the first line print integer  $n_1$  ( $n_1 > 0$ ) — the number of elements in the first set. Then print  $n_1$  numbers — the elements that got to the first set.

In the next line print integer  $n_2$  ( $n_2 > 0$ ) — the number of elements in the second set. Then print  $n_2$  numbers — the elements that got to the second set.

In the next line print integer  $n_3$  ( $n_3 > 0$ ) — the number of elements in the third set. Then print  $n_3$  numbers — the elements that got to the third set.

The printed sets must meet the described conditions. It is guaranteed that the solution exists. If there are several solutions, you are allowed to print any of them.

### Examples

<b>input</b>	
3	
-1 2 0	
<b>output</b>	
1 -1	
1 2	
1 0	

<b>input</b>	
4	
-1 -2 -3 0	
<b>output</b>	
1 -1	
2 -3 -2	
1 0	

### → Attention

Package for this problem was not updated by the problem writer or Codeforces administration after we've upgraded the judging servers. To adjust the time limit constraint, solution execution time will be multiplied by 2. For example, if your solution works for 400 ms on judging servers, then value 800 ms will be displayed and used to determine the verdict.

### Codeforces Round #181 (Div. 2)

Finished

### → Virtual participation

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### → Problem tags

brute force constructive algorithms  
 implementation

No tag edit access

### → Contest materials

- Announcement 
- Tutorial 