Triplet

This is a very simple problem. Given a list of N integers, find the minimum and maximum "triplet". A triplet is defined as the product of three numbers in the list of N integers.

Input

The first line of the input is N (3 <= N <= 50,000). The next line contains N integers, separated by a single space. The values of the integers are between -1000 and 1000 inclusive.

Output

Print two integers, separated by a single space, of the minimum triplet followed by the maximum triplet.

Sample Input

```
5
3 -2 10 0 1
```

Sample Output

```
-30 60
```

Explanation

The possible triplets are:

1. (3, -2, -10) → value = 60
2. (3, -2, 0) → value = 0
3. (3, -2, 1) → value = -6
4. (3, -10, 0) → value = 0
5. (3, -10, 1) → value = -30
6. (3, 0, 1) → value = 0
7. (-2, -10, 0) → value = 0
8. (-2, -10, 1) → value = 20
9. (-2, 0, 1) → value = 0
10. (-10, 0, 1) → value = 0

Skeleton

You are given the skeleton file `Triplet.java`.

Notes

1. You are free to use anything to solve this problem.
2. To pass all test cases on CodeCrunch, your code needs to run in O(N) or faster.