H. Zular Eclipse

time limit per test: 1 second

memory limit per test: 256 megabytes

Winter is about to come. Our friend Zula prefers to stay indoors and play video games. Since he is a computer science student, he decided to develop his own video game. He named it **Zular Eclipse**.

The game has n aliens and q rounds. Each alien has their own strength. In each round, Zula's character has a certain power p. He wants to defeat all aliens but he could only kill an alien if and only if his power in the current round is greater than or equal to the alien's strength.

All aliens which were dead in the previous round will respawn.

Knowing the number of aliens, the strength of each alien and the number of rounds. In each round, Zula's character has an integer p representing his power.

Help Zula count the number of aliens that he can kill and the total sum of their strengths per round.

Input

The first line contains an integer n $(1 \leq n \leq 10^5)$ – the number of aliens.

The second line contains n integers $s_1, s_2, s_3, \ldots, s_n$ $(1 \leq s \leq 10^9)$ – the strength of each alien.

The third line contains an integer q $(1 \leq q \leq 10^5)$ – the number of rounds.

In each of the following q lines, you're given an integer p_i $(1 \leq p_i \leq 10^9)$ – the power of Zula's character in the i_{th} round.

Output

Print q lines. Each line has two integers — The number of aliens that he can kill and the total sum of their strengths.

If he can't kill any aliens, print -1.

Example

input Copy

```
5
1 2 3 4 5
3
3
5
9
```

output Copy

```
3 6
5 15
5 15
```

ICPC Assiut University Training - Juniors Phase 1 Sheets-2022

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→ Group Contests

- Juniors Phase 1 Practice #5 (Bitmask, Bitset, Bits)
- Juniors Phase 1 Practice #4 (Binary search , Two pointers)
- Juniors Phase 1 Practice #3 (STL 2)
- Juniors Phase 1 Practice #2 (STL 1)
- Juniors Phase 1 Practice #1 (Prefix sum , Frequency Array)

Juniors Phase 1 Practice #4 (Binary search , Two pointers)

Finished

Practice

→ About Time Scaling

This contest uses time limits scaling policy (depending on a programming language). The system automatically adjusts time limits by the following multipliers for some languages. Despite scaling (adjustment), the time limit cannot be more than 30 seconds. Read the details by the link.

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Submit?

Language: GNU G++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
312328996	Mar/25/2025 16:51	Accepted
312328075	Mar/25/2025 16:45	Wrong answer on test 3
312327962	Mar/25/2025 16:44	Wrong answer on test 1