

Equal Sums

Problem

I have a set of positive integers **S**. Can you find two non-empty, distinct subsets with the same sum?

Note: A subset is a set that contains only elements from **S**, and two subsets are distinct if they do not have exactly the same elements.

Input

The first line of the input gives the number of test cases, **T**. **T** test cases follow, one per line. Each test case begins with **N**, the number of positive integers in **S**. It is followed by **N** distinct positive integers, all on the same line.

Output

For each test case, first output one line containing "Case #x:", where x is the case number (starting from 1).

- If there are two different subsets of **S** that have the same sum, then output these subsets, one per line. Each line should contain the numbers in one subset, separated by spaces.
- If it is impossible, then you should output the string "Impossible" on a single line.

If there are multiple ways of choosing two subsets with the same sum, any choice is acceptable.

Limits

Memory limit: 1GB.

No two numbers in **S** will be equal.

$1 \leq T \leq 10$.

Test set 1 (Visible Verdict)

Time limit: 60 seconds.

N is *exactly* equal to 20.

Each number in **S** will be a positive integer less than 10^5 .

Test set 2 (Hidden Verdict)

Time limit: 120 seconds.

N is *exactly* equal to 500.

Each number in **S** will be a positive integer less than 10^{12} .

Sample

Sample Input

Sample Output

```
2
20 1 2 3 4 5 6 7 8 9 10 11 12
13 14 15 16 17 18 19 20
20 120 266 858 1243 1657 1771
2328 2490 2665 2894 3117 4210
4454 4943 5690 6170 7048 7125
9512 9600
```

Case #1: Possible
Case #2: Possible