

/\*\*Day 86 coding Statement :

Mahesh got a beautiful array named A as a birthday gift from his beautiful girlfriend Namratha.

There are N positive integers in that array. Mahesh loved the array so much that he started to spend a lot of time on it everyday.

One day, he wrote down all possible subsets of the array. Then for each subset, he calculated the sum of elements in that subset

and wrote it down on a paper. Unfortunately, Mahesh lost the beautiful array :(.

He still has the paper on which he wrote all subset sums.

Your task is to rebuild beautiful array A and help the couple stay happy :)

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import java.io.IOException;
import java.io.PrintWriter;
import java.util.ArrayList;
import java.util.Map;
import java.util.Scanner;

import java.util.TreeMap;
public class Main {
    public static void main(String[] args) throws IOException {
        Scanner in = new Scanner(System.in);
        PrintWriter out = new PrintWriter(System.out);
        int t = in.nextInt();
        while(t--> 0) {
            int n = in.nextInt();
            Map<Integer, Integer> subsets = new TreeMap<Integer, Integer>();
            for(int i = 0; i < 1 << n; i++) {
                int s = in.nextInt();
                Integer prev = subsets.get(s);
                if (prev == null)
                    prev = 0;
                subsets.put(s, prev + 1);
            }
            subsets.remove(0);
            ArrayList<Integer> nums = new ArrayList<Integer>();
            for(int i = 0; i < n; i++) {
                nums.add(subsets.keySet().iterator().next());
                for(int mask = 1 << nums.size() - 1; mask < 1 << nums.size(); mask++) {
                    int s = 0;
                    for(int j = 0; j <= i; j++)

                        if ((mask & (1 << j)) > 0)
                            s += nums.get(j);
                    Integer cnt = subsets.get(s);
                    if (cnt == 1)
                        subsets.remove(s);
                    else
```

```
subsets.put(s, cnt - 1);
}
}
for(int i = 0; i < n; i++)
out.print(nums.get(i) + " ");
out.println();
}
in.close();
out.close();
}
}
```