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The 2022 Greater NY Regional Contest

B · Sum of Remainders

Time Limit: 2 seconds
Memory Limit: 128MB

Given a *multiset* (elements may be duplicates), **K** of integers >= 2, the *sum of remainders function* associated with **K**, S_K, defined on non-negative integers, **n**, is given by:

$$S_K(n) = \sum (k \text{ in } K \mid n \bmod k)$$

For instance, if **K** = {2, 5, 5, 11},

$S_K(23) = 23 \bmod 2 + 23 \bmod 5 + 23 \bmod 5 + 23 \bmod 11 = 1 + 3 + 3 + 1 = $ **8**.

Note that $S_K(0) = 0$ for any **K**.

For this problem you will write a program which takes as input the values of $S_K(n)$ for **n** from 1 to **N** for some unknown *multiset* **K**. The program will output the number of integers in **K** followed by the integers in **K** in non-decreasing order.

Input

Input consists of multiple lines. The first line contains a single decimal integer **N**, ($1 \le N \le 100$), which is the number of values of $S_K(n)$, ($1 <= n <= N$), that follow. The following lines contain the **N** values as space separated decimal integers, 10 values per line (except perhaps for the last line).

Output

There is one line of output containing a space separated sequence of decimal integers. The first value is the number, **m**, of integers in the *multiset* **K**. This is followed by the **m** integers of the *multiset* **K** in non-decreasing order. Note: if a value is a member multiple times, it should appear in the list that many times.

Sample 1:

Sample Input	Sample Output
16 4 6 10 12 6 8 12 14 18 10 3 5 9 11 5 7	4 2 5 5 11

Sample 2:

Sample Input	Sample Output
20 3 6 6 9 12 6 2 5 5 8 11 5 8 4 4 7 10 4 7 10	3 3 6 7