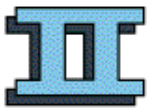
UVa Online Judge

10202 Pairsumonious Numbers

For $10 > N > 2$ numbers we form $N * (N-1)/2$ sums by adding every pair of the numbers. Your task is to find the N numbers given the sums.



Input

Each line of input contains N followed by $N * (N-1)/2$ integer numbers separated by a space.

Output

For each line of input, output one line containing N integers in non-descending order such that the input numbers are pairwise sums of the N numbers. If there is more than one solution, any one will do; if there is no solution, print '`Impossible`'.

Sample Input

```
3 1269 1160 1663
3 1 1 1
5 226 223 225 224 227 229 228 226 225 227
5 216 210 204 212 220 214 222 208 216 210
5 -1 0 -1 -2 1 0 -1 1 0 -1
5 79950 79936 79942 79962 79954 79972 79960 79968 79924 79932
```

Sample Output

```
383 777 886
Impossible
111 112 113 114 115
101 103 107 109 113
-1 -1 0 0 1
39953 39971 39979 39983 39989
```