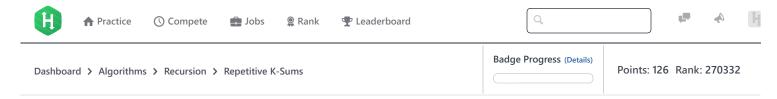
16/11/2017 HackerRank



Repetitive K-Sums **■**



Problem Submissions Leaderboard Discussions Editorial

Alice thinks of a non-decreasing sequence of non-negative integers and wants Bob to guess it by providing him the set of all its **K**-sums with repetitions.

What is this? Let the sequence be $\{A[1], A[2], ..., A[N]\}$ and **K** be some positive integer that both Alice and Bob know. Alice gives Bob the set of all possible values that can be generated by this - $A[i_1] + A[i_2] + ... + A[i_K]$, where $1 \le i_1 \le i_2 \le ... \le i_K \le N$. She can provide the values generated in any order she wishes to. Bob's task is to restore the initial sequence.

Consider an example. Let N = 3 and K = 2. The sequence is $\{A[1], A[2], A[3]\}$. The sequence of its **2**-sums with repetitions is $\{A[1] + A[1], A[1] + A[2], A[1] + A[2], A[2] + A[2], A[2] + A[3], A[3] + A[3]\}$. But its elements could be provided in any order. For example any permutation of $\{2, 3, 4, 4, 5, 6\}$ corresponds to the sequence $\{1, 2, 3\}$.

Input Format

The first line of the input contains an integer **T** denoting the number of test cases.

The description of **T** test cases follows.

The first line of each test case contains two space separated integers N and K.

The second line contains the sequence S_i of all K-sums with repetitions of the sequence Alice initially thought of.

Constraints

- $1 \le T \le 10^5$
- $1 \le N \le 10^5$
- $1 \le K \le 10^9$
- $2 \le S_i \le 10^{18}$

Note

The total number of elements in any input sequence does not exceed 10⁵

Each element of each input sequence is non-negative integer not exceeding 10¹⁸.

Each input sequence is a correct sequence of all K-sums with repetitions of some non-decreasing sequence of non-negative integers.

Output Format

For each test case, output a single line containing the space separated list of elements of the non-decreasing sequence Alice thinks of. If there are several possible outputs you can output any of them.

Sample Input 0

Sample Output 0

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```
1
6 28
1 2 3
```

Explanation 0

```
Sample case #00: When N = 1 and K = 3 the only K-sum is S[1] = 3 * A[1]. Hence A[1] = S[1] / 3 = 3 / 3 = 1.
```

Sample case #01: Since 6 + 6 = 12, 6 + 28 = 34, 28 + 28 = 56, then Alice indeed could think of the sequence {6, 28}.

Sample case #02: It corresponds to the example in the problem statement.

```
f y in
Submissions:1050
Max Score:150
Difficulty: Advanced
Rate This Challenge:
☆☆☆☆☆
```

```
Current Buffer (saved locally, editable) & 🗗
                                                                                           Java 7
                                                                                                                             Ö
 1 ▼ import java.io.*;
 2 import java.util.*;
 3 import java.text.*;
   import java.math.*;
   import java.util.regex.*;
 6
 7 ▼ public class Solution {
 8
 9 ▼
         public static void main(String[] args) {
             /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Solution. */
10 ▼
11
12
    }
                                                                                                                    Line: 1 Col: 1
                      Test against custom input
                                                                                                        Run Code
                                                                                                                     Submit Code
1 Upload Code as File
```

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