The one of the coins P87919_en

Perhaps you have read that some problems are so classic that they barely need a statement. For this one, given a collection of n coins with different values and a target amount A, we ask you to indicate the way to add up to A by using coins of the largest possible values. In particular, a way is better than another one if the former uses more coins of the largest value; in the event of a tie, if it uses more coins of the second largest value, etc.

Input

Input consists of several cases. Each case begins with the number of coins n between 1 and 100, followed by n different integer numbers $v_1, \ldots, v_n$, where $1 \leq v_i \leq 10000$. Finally, we have an integer number $1 \leq A \leq 100000$.

Output

For every case, print in non-increasing order the necessary coins to get A, choosing the combination with coins of largest value in case of a tie. If there is no solution, print -1.

Sample input 1

```
8
1 2 5 10 25 50 100 200
481

3
1 4 5
5

6
428 19 521 67 84 101
75

6
428 19 521 67 84 101
749
```

Sample output 1

```
200,200,50,25,5,1
5
-1
521,19,19,19,19,19,19,19,19,19,19,19,19
```

Problem information

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