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## F - Candy Redistribution

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Time Limit: 2 sec / Memory Limit: 1024 MiB

Score : 525 points

### Problem Statement

There are  $N$  children, numbered 1 to  $N$ .

Child  $i$  has  $A_i$  candies.

Your goal is to execute the following operation as few times as possible so that eventually all  $N$  children have the same number of candies.

- Choose two distinct children  $x, y$ , and choose a positive integer  $z$  not exceeding the number of candies child  $x$  has. Take  $z$  candies from child  $x$  and give them to child  $y$ .

Determine whether there exists a sequence of operations such that eventually all  $N$  children have the same number of candies. If it exists, find one such sequence with the minimum number of operations.

### Constraints

- $2 \leq N \leq 20$
- $1 \leq A_i \leq 10^8$
- All input values are integers.

## Input

The input is given from Standard Input in the following format:

```
 $N$   
 $A_1 \dots A_N$ 
```

## Output

If there is no sequence of operations such that eventually all  $N$  children have the same number of candies, output -1.

If it exists, output one with the minimum number of operations in the following format:

```
 $q$   
 $x_1 \ y_1 \ z_1$   
 $\vdots$   
 $x_q \ y_q \ z_q$ 
```

Here,  $q$  represents the number of operations, and  $x_i, y_i, z_i$  represent the values of  $x, y, z$  chosen in the  $i$ -th operation.

If there are multiple solutions, outputting any of them will be considered correct.

### Sample Input 1

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```
4  
1 7 4 8
```

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### Sample Output 1

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```
3  
2 3 1  
2 4 1  
4 1 4
```

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In this sample output, the operations are executed as follows:

1. Take 1 candy from child 2 and give it to child 3. Immediately after this, the number of candies each child has is 1, 6, 5, 8.
2. Take 1 candy from child 2 and give it to child 4. Immediately after this, the number of candies each child has is 1, 5, 5, 9.

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3. Take 4 candies from child 4 and give them to child 1. Immediately after this, the number of candies each child has is 5, 5, 5, 5.

Eventually, all  $N$  children have exactly five candies each.

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## Sample Input 2

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```
2
100 3
```

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## Sample Output 2

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```
-1
```

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