

DMOPC '15 Contest 3 P2 - Cheesecake Distribution

Time limit: 2.0s **Memory limit:** 256M

FatalEagle has managed to survive his first semester English course so far. To celebrate, he invited N friends over for a party!

For dessert, he decided to cut **cheesecake** some cheesecake. **FatalEagle**'s friends are greedy. As soon as he finished, his friends grabbed all the slices that they could. **FatalEagle** is a strong proponent of equality, so he would like to redistribute the slices such that each friend gets the same amount. He will do this by persuading a friend with the maximum number of slices to give 1 slice to a friend with the minimum number of slices, and repeating this process until the slices are equally distributed. Since **FatalEagle**'s friends are also stubborn, so it will take him 1 minute to convince them each time.

FatalEagle wants to know how long it will take for him to evenly distribute the cheesecake slices.

Input Specification

The first line of input will contain N ($1 \leq N \leq 10^5$), the number of friends.

The next line will contain N space-separated nonnegative integers, the number of slices that each friend grabbed. Each friend will have no more than 10^{12} slices. (It's a really big cheesecake)

Output Specification

Output one integer, the number of minutes it will take for **FatalEagle** to evenly distribute the cheesecake following this process. If this is not possible, output `Impossible`.

Note

The input and output may not fit in 32-bit integer variables. Please use 64-bit integer variables (such as `long` in Java and `long long` in C/C++).

Sample Input 1

```
3
6 1 2
```

Sample Output 1

```
3
```

Explanation for Sample Output 1

FatalEagle will perform the following steps:

1. Ask friend 1 to give a slice to friend 2.
2. Ask friend 1 to give a slice to friend 3.
3. Ask friend 1 to give a slice to friend 2.

Sample Input 2

```
2
1 2
```

Sample Output 2

```
Impossible
```

Explanation for Sample Output 2

No matter what **FatalEagle** does, one friend will always have more than the other.

Sample Input 3

```
10
3 5 4 6 5 2 4 6 9 6
```

Sample Output 3

```
7
```