

Problem I. Monsters Battle Royale

Time Limit 2000 ms

Mem Limit 1048576 kB

Problem Statement

There are N monsters, numbered $1, 2, \dots, N$.

Initially, the health of Monster i is A_i .

Below, a monster with at least 1 health is called alive.

Until there is only one alive monster, the following is repeated:

- A random alive monster attacks another random alive monster.
- As a result, the health of the monster attacked is reduced by the amount equal to the current health of the monster attacking.

Find the minimum possible final health of the last monster alive.

Constraints

- All values in input are integers.
- $2 \leq N \leq 10^5$
- $1 \leq A_i \leq 10^9$

Input

Input is given from Standard Input in the following format:

```
N
A1 A2 ... AN
```

Output

Print the minimum possible final health of the last monster alive.

Sample 1

Input	Output
4 2 10 8 40	2

When only the first monster keeps on attacking, the final health of the last monster will be 2, which is minimum.

Sample 2

Input	Output
4 5 13 8 1000000000	1

Sample 3

Input	Output
3 1000000000 1000000000 1000000000	1000000000