Problem A

Last Stone Weight

Time limit: 1 second
Memory limit: 1024 megabytes

Problem Description

We are playing a game with the stones. On each turn, we choose the heaviest two stones and smash them together. Suppose the heaviest two stones have weights x and y with $x \leq y$. The result of this smash is:

- If $x = y$, both stones are destroyed, and
- If $x \neq y$, the stone of weight x is destroyed, and the stone of weight y has new weight $y - x$.

At the end of the game, there is at most one stone left.

Print the weight of the last remaining stone.

Input Format

There are several test cases. Each test case contains two lines. The first line contains an integer N, the number of stones. The second line contains N integers, representing the weight of the stones.

Output Format

For each test case, print a number which means the weight of the last remaining stone. If there are no stones left, print 0.

Technical Specification

- $1 <= N <= 30$
- $0 < the\ weight\ of\ each\ stone \leq 10^3$

Sample Input 1

```
6
2 7 4 1 8 1
1
1
```

Sample Output 1

```
1
1
```