AUBG, Computer Science Department
Annual Programming Competition
March 22, 2017

Task. Sums

Write a program that inputs a sequence of *N* integers and finds out the smallest positive integer that cannot be presented as a sum of the elements of any subsequence (consisting of one or more elements) of the given sequence.

Input

On the first line, a value of *N* is written. On the second line, the elements of the given sequence are written, separated by spaces.

Output

One integer equals to the requested value.

Constraints:
$1 < N < 1000$; all the elements of the given sequence are integers in a range from -1000 to 1000.

Example

Input

```
5
1 -2 0 7 7
```

Output

```
2
```