Problem H – Hidden number.

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As you know, Santiago is an expert summing numbers, this time he is summing numbers from a list L of N positive integer numbers, not necessarily different. He likes to perform sums so much that he selects an integer X and looks for a subsequence of S from L such that the sum of the elements of S equals X. For example, if the list is $(10, 3, 1, 2, 2, 4)$, and $X = 14$, then, Santiago can take the subsequences $(10, 3, 1)$, $(10, 4)$, or $(10, 2, 2)$ since $10 + 3 + 1 = 10 + 4 = 10 + 2 + 2 = 14$.
Santiago has noticed there may be some values for X for which he can choose multiple different subsequences S, however, you have pointed out that there also exist some values for X for which no possible subsequence S exists. Santiago does not believe you, thats why he wants you to find the smallest possible value for X for which no subsequence S exists in his list.

Input

The first line of the input contains an integer N ($1 \leq N \leq 10^6$), representing the number of elements in the list. The second and last line in the input contains N numbers separated by a space between, the numbers in the list, each number will have a value between 1 and 10^6.

Output

Output a single line with an integer indicating the smallest positive integer value for X such that Santiago can not find a subsequence S.

Sample input 1	**Sample output 1**
2 1 1	3

Sample input 2	**Sample output 2**
5 3 2 5 4 10	1