

Sort a sequence of integers in non-decreasing order by repeating a single operation:

Delete any of one of the numbers in the sequence and add it to an existing number.

For example, to sort (3,2,2), simply take one of the 2's and add to other 2 to get (3,4) in a single operation.

Input

A number of of inputs (≤ 150), each starting with n on a line, followed by a line with n numbers a_i ($1 \leq n \leq 5000$, $1 \leq a_i \leq 100000$).

Output

For each input, output the minimum number of operations required to sort the sequence.

Sample Input

```
3
3 2 2
5
8 2 7 3 1
```

Sample Output

```
1
3
```