Problem G. Alice, Bob and Lego Houses

Time limit 1000 ms
Mem limit 262144 kB

There are n lego blocks put from left to right on a table. The blocks are numbered from left to right. The i-th block has weight w_i. Alice and Bob use these blocks to create lego houses.

Alice can use any number of blocks from the left (she can't skip blocks, she uses them in a row).

Bob can use any number of blocks from the right (he can't skip blocks, he uses them in a row).

Of course, if Alice uses a block, Bob can't use it (and vice versa).

They want to be fair. Their goal is to use the same total weight of blocks. What is the most number of blocks they can use in total?

Input

The first line contains an integer t ($1 \le t \le 10^4$) — the number of test cases.

The first line of each test case contains an integer n ($1 \le n \le 2 \cdot 10^5$) — the number of blocks on the table.

The second line of each test case contains n integers $w_1, w_2, \ldots, w_n$ ($1 \le w_i \le 10^4$) — the weights of blocks from left to right.

It is guaranteed that the sum of n over all test cases does not exceed $2 \cdot 10^5$.

Output

For each test case, print a single integer — the maximum number of blocks Alice and Bob can use in total while satisfying the condition.

Sample 1

Input	Output
4 3 10 20 10 6 2 1 4 2 4 1 5 1 2 4 8 16 9 7 3 20 5 15 1 11 8 10	2 6 0 7

Note

For the first test case, Alice will use one block from the left and Bob will use one block from the right. There is no better way for them to use the same total amount of weight. The answer is 2 because they use two blocks in total.

For the second test case, Alice will use the first three blocks from the left (with total weight 7) and Bob will use the first three blocks from the right (with total weight 7). They cannot use more blocks since all the blocks have been used, so the answer is 6 (because they use six blocks in total).

For the third test case, there is no way Alice and Bob will use the same non-zero weight so the answer is 0.

For the fourth test case, Alice will use blocks with weights $[7, 3, 20]$ and Bob will use blocks with weights $[10, 8, 11, 1]$, they each use 30 weight. There is no better partition so the answer is 7.