The Smallest Pair Problem Code: **SMPAIR**

You are given a sequence $a_1, a_2, ..., a_N$. Find the smallest possible value of $a_i + a_j$, where $1 \leq i < j \leq N$.

Input

The first line of the input contains an integer **T** denoting the number of test cases. The description of **T** test cases follows.

The first line of each description consists of a single integer **N**.

The second line of each description contains **N** space separated integers - $a_1, a_2, ..., a_N$respectively.

Output

For each test case, output a single line containing a single integer - the smallest possible sum for the corresponding test case.

Constraints

- $T = 10^5$, $N = 2$: 13 points.
- $T = 10^5$, $2 \leq N \leq 10$: 16 points.
- $T = 1000$, $2 \leq N \leq 100$: 31 points.
- $T = 10$, $2 \leq N \leq 10^5$: 40 points.
- $1 \leq a_i \leq 10^6$

Example

Input:

```
1

4

5 1 3 4
```

Output:

```
4
```

Explanation

Here we pick a_2 and a_3. Their sum equals to 1 + 3 = 4.