

Problem W. The Smallest Pair

Time limit 1000 ms
Code length Limit 50000 B
OS Linux

Read problems statements in [Mandarin Chinese](#) and [Russian](#).

You are given a sequence a_1, a_2, \dots, 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, \dots, 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.
- $1 \leq a_i \leq 10^6$

Sample 1

Input	Output
1 4 5 1 3 4	4

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