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Contest Code: SNCK1A21 Problem Code: EQBEAUTY



Read problem statements in Mandarin Chinese, Russian, and Vietnamese as well.

The **beauty** of an (non-empty) array of integers is defined as the difference between its largest and smallest element.

For example, the **beauty** of the array [2,3,4,4,6] is 6-2=4 .

An array A is said to be **good** if it is possible to partition the elements of A into two non-empty arrays B_1 and B_2 such that

- B_1 and B_2 have the same beauty.
- Each element of array A should be in exactly one array: either in B_1 or in B_2 .

For example, the array [6,2,4,4,4] is good because its elements can be partitioned into two arrays $B_1=[6,4,4]$ and $B_2=[2,4]$, where both B_1 and B_2 have the same beauty (6-4=4-2=2).

You are given an array A of length N. In one move you can:

• Select an index i $(1 \le i \le N)$ and either increase A_i by 1 or decrease A_i by 1.

Find the minimum number of moves required to make the array \boldsymbol{A} good.

Input Format

- ullet The first line of input contains a single integer T, denoting the number of test cases. The description of T test cases follow.
- Each testcase contains two lines.
- The first line contains N, the length of the array.
- The second line contains N space-separated integers A_1, A_2, \ldots, A_N representing the initial array.

Output Format

For each testcase, output in a single line, the minimum number of moves required to make the given array good.

Constraints

- $1 \le T \le 10^5$
- $2 \le N \le 10^5$
- $-10^9 \le A_i \le 10^9$
- Sum of N does not exceeds $5 \cdot 10^5$ over all testcases

Sample Input 1 🖆

2

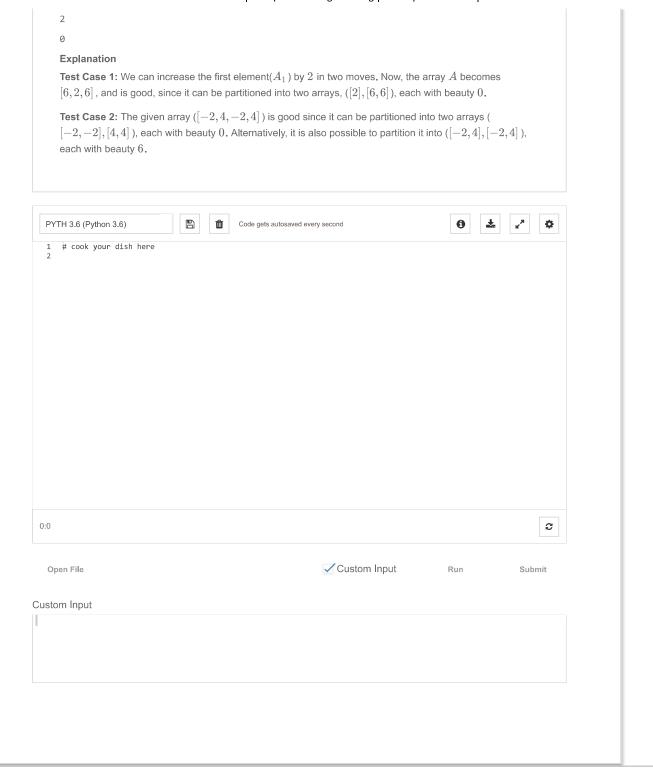
3

4 2 6

1

-2 4 -2 4

Sample Output 1 🖆



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Problem Setting	<u>Challenge</u>	CodeChef for Business	Code of Conduct
CodeChef Tutorials	<u>Peer</u>		Bug Bounty Program
CodeChef Wiki	School		
	FAQ's		