SAC '22 Code Challenge 4 P3 - Obligatory Math Problem

Time limit: 1.0s **Memory limit:** 256M

Since Max loves setting lazy problems, he starts fiddling with an array of N numbers, A, and finds a problem:

> Given an array, minimize $\sum_{i=1}^{N} |V - A_i|$, where V is the minimizing value and $|a - b|$ denotes the absolute difference between a and b.

Can you solve this lazy problem?

Constraints

Subtask 1 [40%]

$1 \leq N \leq 1\,000$

$-100 \leq A_i \leq 100$

Subtask 2 [60%]

$1 \leq N \leq 100\,000$

$-10^9 \leq A_i \leq 10^9$

Input Specification

The first line will contain N, the number of elements in the array.

The second line will contain N space-separated integers, the elements of the array, A_i.

Output Specification

Output the V that minimizes the equation $\sum_{i=1}^{N} |V - A_i|$.

Note: If there are multiple solutions, any will be accepted.

Sample Input

```
6
-5 4 9 -3 2 20
```

Sample Output

```
4
```

Note that 2 and 3 would also be valid solutions.