Mean Normalization

There are n stocks numbered from 0 to $n-1$ on the market. For the i^{th} stock, m_i prices have been recorded over last year. The prices for the i^{th} stocks are given by integers $p_{i,0}, p_{i,1}, \ldots, p_{i,m_i-1}$. Let $mean_i$ be the mean of prices of the i^{th} stock.

Now, we want to normalize prices of each stock in such a way that the mean of prices of each stock is x, and x is equal to $mean_i$ for some i.

You are provided a black-box algorithm for this task. The algorithm takes the stocks' prices and x as the input. It's running time is equal to the $\sum_{i=0}^{n-1} \sum_{j=0}^{m_i-1} |p_{i,j} - x|$.

The goal is to find the minimum running time of this algorithm. The answer will be considered correct if its absolute or relative error doesn't exceed 10^{-6}.

Input Format

In the first line, there is a single integer n. After that, prices of each single stock are given in 2 consecutive lines. For the i^{th} stock, in the first of these lines, there is a single integer m_i, and in the second of these lines, there are m_i space-separated integers $p_{i,0}, p_{i,1}, \ldots, p_{i,m_i-1}$.

Constraints

- $1 \le n, m_i \le 10^5$
- sum of m_i doesn't exceed 10^5
- $1 \le p_{i,j} \le 10^9$

Output Format

In a single line, print one number denoting the minimum running time of the algorithm. The answer will be considered correct if its absolute or relative error doesn't exceed 10^{-6}.

Sample Input 0

```
2
3
1 3 4
2
11 10
```

Sample Output 0

```
19.000000000000
```

Explanation 0

There are two stocks. The prices recorder for the first of them are: $1, 3, 4$, so their mean, $mean_0$, is equal to $(1+3+4)/3 = 2.666666666667$. For the seconds stock, the mean of its prices, $mean_1$, is $(11+10)/2 = 10.5$.

If we calculate the running time of the black-box algorith for each of these two means, it turns out that the smaller cost is achieved for $mean_0$, and it's 19.0.

Sample Input 1

```
3
4
2 55 3 13
1
1
3
20 20 22
```

Sample Output 1

```
98.000000000000
```

Explanation 1

There are three stocks. The prices recorder for the first of them are: $2, 55, 3, 13$, so their mean, $mean_0$, is equal to $(2+55+3+13)/4 = 18.25$. For the second stock, there is just a single price recorded, so $mean_1$, is 1. For the third stock, $mean_2 = (20+20+22)/3 = 20.6666667$.

If we calculate the running time of the black-box algorith for each of these three means, it turns out that the smaller cost is achieved for $mean_1$, and it's 98.0.