Simple Statistics Problem Code: **SIMPSTAT**

Sergey has made **N** measurements. Now, he wants to know the average value of the measurements made.

In order to make the average value a better representative of the measurements, before calculating the average, he wants first to remove the highest **K** and the lowest **K**measurements. After that, he will calculate the average value among the remaining **N - 2K** measurements.

Could you help Sergey to find the average value he will get after these manipulations?

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 test case contains two space-separated integers **N** and **K** denoting the number of measurements and the number of the greatest and the lowest values that will be removed.

The second line contains **N** space-separated integers A_1, A_2, ..., A_N denoting the measurements.

Output

For each test case, output a single line containing the average value after removing **K**lowest and **K** greatest measurements.

Your answer will be considered correct, in case it has absolute or relative error, not exceeding 10^{-6}.

Constraints

- $1 \le T \le 100$
- $1 \le N \le 10^4$
- $0 \le 2K < N$
- $-10^6 \le A_i \le 10^6$

Subtasks

- Subtask #1 (50 points): **K = 0**
- Subtask #2 (50 points): **no additional constraints**

Example

Input:

```
3

5 1

2 9 -10 25 1
```

```
5 0

2 9 -10 25 1

3 1

1 1 1
```

Output:

```
4.000000

5.400000

1.000000
```

Explanation

Example case 1. After removing **1** greatest and **1** lowest measurement, we get the set **{2, 9, 1}**. The average value in this set is **(2+9+1)/3=4**.

Example case 2. The average value in the set **{2, 9, -10, 25, 1}** is **(2+9-10+25+1)/5=5.4**.

Example case 3. After removing the **1** largest and smallest measurements, Sergey will be left with only one measurement, i.e. **1**. Average of this is **1** itself.