





PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS HACKS ROOM STANDINGS CUSTOM INVOCATION

C. Maximum Median

time limit per test: 2 seconds memory limit per test: 256 megabytes input: standard input output: standard output

You are given an array a of n integers, where n is odd. You can make the following operation with it:

• Choose one of the elements of the array (for example a_i) and increase it by 1 (that is, replace it with a_i+1).

You want to make the median of the array the largest possible using at most k operations.

The median of the odd-sized array is the middle element after the array is sorted in non-decreasing order. For example, the median of the array [1,5,2,3,5] is 3.

Input

The first line contains two integers n and k ($1 \le n \le 2 \cdot 10^5$, n is odd, $1 \le k \le 10^9$) — the number of elements in the array and the largest number of operations you can make.

The second line contains n integers a_1, a_2, \ldots, a_n $(1 \le a_i \le 10^9)$.

Output

Print a single integer — the maximum possible median after the operations.

Examples

input	Сору
3 2 1 3 5	
output	Сору
5	
input	Сору
5 5 1 2 1 1 1	
output	Сору
3	
	1
input	Сору
7 7	
4 1 2 4 3 4 4	
output	Сору
5	

Note

In the first example, you can increase the second element twice. Than array will be [1,5,5] and it's median is 5.

In the second example, it is optimal to increase the second number and than increase third and fifth. This way the answer is $\bf 3$.

In the third example, you can make four operations: increase first, fourth, sixth, seventh element. This way the array will be [5, 1, 2, 5, 3, 5, 5] and the median will be [5, 1, 2, 5, 3, 5, 5] and the median will be [5, 1, 2, 5, 3, 5, 5].

Finished Practice

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Practice

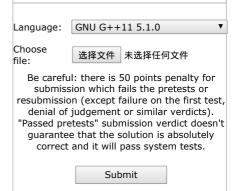
→ Submit?

You are registered for practice. You can solve problems unofficially. Results can be found in the contest status and in the bottom of standings.

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest





→ Contest materials

Announcement (en)

2019/9/26 Problem - C - Codeforces

Tutorial #1 (en)Tutorial #2 (en)

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