



HOME TOP CONTESTS GYM PROBLEMSET GROUPS RATING API HELP HONORCUP 🖫 CALENDAR

PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS HACKS ROOM STANDINGS CUSTOM INVOCATION

## E. Minimizing Difference

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

You are given a sequence  $a_1, a_2, \ldots, a_n$  consisting of n integers.

You may perform the following operation on this sequence: choose any element and either increase or decrease it by one.

Calculate the minimum possible difference between the maximum element and the minimum element in the sequence, if you can perform the aforementioned operation  ${\bf no}$   ${\bf more}$  than k times.

### Input

The first line contains two integers n and k ( $2 \le n \le 10^5, 1 \le k \le 10^{14}$ ) — the number of elements in the sequence and the maximum number of times you can perform the operation, respectively.

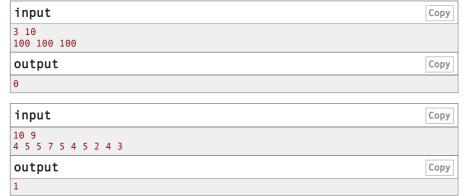
The second line contains a sequence of integers  $a_1, a_2, \ldots, a_n$   $(1 \le a_i \le 10^9)$ .

#### Output

Print the minimum possible difference between the maximum element and the minimum element in the sequence, if you can perform the aforementioned operation  ${\bf no}$   ${\bf more}$  than k times.

### **Examples**





### Note

In the first example you can increase the first element twice and decrease the third element twice, so the sequence becomes [3,3,5,5], and the difference between maximum and minimum is 2. You still can perform one operation after that, but it's useless since you can't make the answer less than 2.

In the second example all elements are already equal, so you may get  $\boldsymbol{0}$  as the answer even without applying any operations.

# Codeforces Round #592 (Div. 2) 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

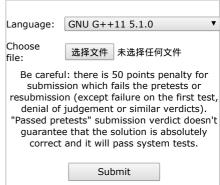
→ Submit?

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

2019/10/14 Problem - E - Codeforces

Announcement #1 (en)Announcement #2 (ru)

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