

Precise Average (avg)

Your friend John works at a shop that sells N types of products, numbered from 0 to $N - 1$. Product i has a price of P_i bytedollars, where P_i is a positive integer.

The government of Byteland has created a new law for shops. The law states that the average of the prices of all products in a shop should be exactly K , where K is a positive integer. John's boss gave him the task to change the prices of the products so the shop would comply with the new law.



Figure 1: It takes a lot of time to keep the shop tidy! ¹

He has lots of other stuff to do, so he asked you for help: what is the minimum number of products whose prices should be changed? A product's price can be changed to any **positive** integer amount of bytedollars.

 Among the attachments of this task you may find a template file `avg.*` with a sample incomplete implementation.

Input

The first line of the input contains two integers N and K . The next line contains N positive integers, P_0, \dots, P_{N-1} .

Output

Output a single integer between 0 and N , inclusive: the answer to the question. It can be proven that it is always possible to change the prices of some products so that the new prices comply with the law.

¹Photo credits: Diego Delso, delso.photo, License CC-BY-SA

Constraints

- $1 \leq N \leq 200\,000$.
- $1 \leq K \leq 1\,000\,000$.
- $1 \leq P_i \leq 1\,000\,000$ for each $i = 0 \dots N - 1$.

Scoring

Your program will be tested against several test cases grouped in subtasks. In order to obtain the score of a subtask, your program needs to correctly solve all of its test cases.

In this task, you can get partial scores. You will get at least 25% of the points for a subtask if you successfully solve the task when the answer is at most 1. This means that for all test cases in this subtask, you output the correct answer if it's at most 1, otherwise, you may output any integer between 2 and N inclusive.

- **Subtask 1** (0 points) Examples.



- **Subtask 2** (25 points) $N \leq 2$.



- **Subtask 3** (35 points) $N \leq 1000$.



- **Subtask 4** (40 points) No additional limitations.



Examples

input	output
2 3 10 6	2
3 9 2 10 1	1

Explanation

In the **first sample case** a possible solution is to change both prices to be 3 bytedollars. It can be proven that changing only one price is not sufficient.

In the **second sample case** a possible solution is to change the first product's price to 16 bytedollars, thus the average will be $\frac{16+10+1}{3} = 9$.