

Animals

Camp IT 2019, Day 2, Available memory 64 MB

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Piotr lived a quite long and happy life travelling all around the world. From the travels he returned with many animals of various species. Now as his life comes to an end, he decided to give all these animals to his (at times he wonders how many) children.

Now that all his K children arrived home from all around the globe, he wants to give them these animals that are of N different species in total. However,

- he shouldn't give two animals of different species to the same person, because they will start fighting,
- each person should get the same number of animals, since otherwise they will start fighting,
- the animals of the same species can be given to several different people,
- clearly, Piotr cannot give out more animals of a given species than he has,
- there is no problem with not giving away all the animals, all the remaining ones will be given to the Zoo in Milówka.

What is the biggest number of animals that a child can get?

Constraints

- $1 \leq N \leq 50000$
- $1 \leq K \leq 10^9$
- $1 \leq A_i \leq 10^9$

Input

N K A_1 A_2 \dots A_N

Output

Write down what is the maximal number of animals a person can get.

Example

Wejście	Wyjście
3 2 3 1 4	3
4 1 3 2 3 9	9
1 2 1	0
1 2 2	1