Ms. Ronaldo

Ms. Messy Ronaldo is the teacher of a class. She is organizing a group singing competition amongst the students of the class. Some groups are willing to participate whose group sizes are given .The competition is such that all groups are on the stage at the same time. Now, there is a problem as Ms. Ronaldo has only limited number of mics available and mics assigned to one group cannot be reused by any other group as the groups are to sing one after another without any break. She needs to assign them such that the maximum number of students in any group assigned to a mic is minimized and all groups have atleast one mic. Help her.

Note : The number of mics available will be atleast equal to the number of groups.

Input

The first line contains n, the number of groups and the m, the number of mics available.(1<=n,m<=10^5)
The next line contains n integers denoting the size of the groups.(1<=size of any group<=10^8)

Output

Output the maximum students assigned to any mic.
Eg : If a group of size 7 is assigned 2 mics, then the maximum number of students to a mic in the optimized distribution is 4.

Examples

Input:
3 5
5 7 9

Output:
5