Problem L. Lemon trees

Source file name:	`L.c, L.cpp, L.java`
Input:	`Standard`
Output:	`Standard`
Author(s):	

Lemon is a very popular citric fruit used to make a lot of beverages and giving that very known sour taste to almost every meal where it is added.

As you can imagine as most people uses lemons there are also a lot of people which works harvesting lemons to provide the amount of lemon that is needed in the region.

Joseph is owner of N lemon trees in a line of land, each of these trees have an amount of T_i lemons that are ready to be harvested by K people. As there is a high demand for lemon on the region this summer Joseph needs all the lemons to be harvested but he is also conscious that people may get tired of all the harvesting work, that's why he has decided that each person will work with a set of contiguous lemon trees.

Once a person starts harvesting the tree i the person will collect all the T_i lemons the tree has, the total work a person does is measured by the number of lemons the person collected, this is, the sum of lemons for each of the lemon trees the person harvested.

Joseph needs your help to find a way to select the segments of trees each person will work, in such a way that the person who collects more lemons is the minimum possible.

Input

The input contains several test cases. Each test case is described by two lines: the first line of each test case contains two numbers N the amount of lemon trees and K the amount of people working on the lemon harvesting, the second line contains N numbers separated by a space the amount of lemons each lemon tree has.

Output

For each test case you should print a line with a single number, the number of lemons collected by the person that collected more lemons based on the given conditions.

Example

Input	Output
6 3 2 2 2 2 2 2 6 3 6 4 3 2 3 1	4 7

Explanation

In the first test case the work can be distributed evenly to the 3 workers, two lemon trees for each and the one who collects more in this case is 4, any other arrangement will have a worker with more than 4 lemons collected.

The second test case is a little more tricky, the first worker will harvest only the first lemon tree, the second worker harvests the second and third lemon tree and the third worker harvests the last three lemon trees, the one that collects more lemons is the second worker, who will collect 7 lemons. Any other arrangement requires a worker to collect more than 7 lemons.