Split

Input file:	standard input
Output file:	standard output
Time limit:	1 second
Memory limit:	256 megabytes

You are given an array a of n integers and integer m.

You are asked to split this array into m subarrays.

Consider k as the maximum subarray sum of m subarrays.

You are asked to find the minimum value for k.

Input

First line contains n, m $(1 \leq m \leq n \leq 10^5)$- number of elements and number of subarrays.

Second line contains n integers $a_1, \ldots, a_n$ $(1 \leq a_i \leq 10^9)$.

Output

Output the minimum value for k.

Examples

standard input	standard output
5 3 1 2 3 4 5	6
5 3 5 2 4 3 1	6