

Небезопасно — ejudge.kz

Submit a solution for A-Snake

Time limit: 1 s

Real time limit: 5 s

Memory limit: 256M

Problem A: Snake

Write a program that outputs the coordinates of elements from an array of size $n \times m$, which is filled like snake. Snake array - which is filled in like this:
For all j and k ($j < k$): $a_{ij} > a_{(i+1)j}$.
If i is even then, for all j and k ($j < k$): $a_{ij} > a_{jk}$.
If i is odd then, for all j and k ($j < k$): $a_{ij} < a_{jk}$.
Here is an example of 3×4 Snake array
25 23 20 19
13 15 17 18
12 10 9 8
Input format
The first line of input contains a single number t - the number of elements which you must find. $1 \leq t \leq 10000$
The next line contains t integers - the values of the elements that you need print their coordinates.
The next line of input contains 2 space-separated integers, n and m , the number of rows and the columns. $1 \leq n, m \leq 800$
The next n lines contain m integers. Snake array $n \times m$, $-10^7 \leq a_{ij} \leq 10^7$ for each $0 \leq i \leq n$, $0 \leq j \leq m$.
Output format
Print k lines the answer with coordinates for each case. If the given element is not in the snake array, then print "-1".
Examples
Input
5
10 15 13 8 23
3 4
25 23 20 19
13 15 17 18
12 10 9 8
Output
2 1
1 1
1 0
2 3
0 1
Input
8
1 7 17 12 6 15 18 20
5 5
25 24 23 22 21
16 17 18 19 20
15 14 13 12 11
6 7 8 9 10
5 4 3 2 1
Output
4 4
2 1
1 1
2 3
3 0
1 2
1 4
Input
4

Submit a solution for B-Oshiete oshiete yo sono shikumi wo

Time limit: 3 s
Real time limit: 5 s
Memory limit: 256M

Problem B: Oshiete oshiete yo sono shikumi wo

There is only one road and n houses in the Tokyo, and all the houses are on this road. House numbered from 1 to n , and appear in this order. There are a_i ghouls living in the $i - 1$ house. Due to the RC-cells infection, a $k - 1$ roadblock needs to be installed between houses in Tokyo, so that k blocks of houses are detached. Kaneki Ken wants to divide ghouls so that the maximum number of ghouls over blocks (consecutive houses detached by roadblocks) is minimal. Help Kaneki find this number.

- Subtasks
- 1. (20%) $n \leq 100$
 - 2. (30%) $n \leq 1000$
 - 3. (50%) other tests

Input format

The first line contains integers n and k ($1 \leq k \leq n \leq 10^5$). The second line contains the elements of the array a_i ($1 \leq a_i \leq 10^9$).

Output format

Print one number - the minimum possible maximum number of ghouls on the section of the roadblock.

Examples

Input

```
10 3
3 4 2 1 3 4 5 2 2 3
```

Output

```
12
```

Input

```
10 4
3 1 2 4 10 8 4 2 5 3
```

Output

```
12
```

Input

```
2 1
399265 867718
```

Output

```
1266983
```

Notes

In the first example: (3+4+2+1), (3+4+5), (2+2+3)

Submit a solution

Language:

Боранов Данияр Тайырулы [ADS-Lab-03]: Submit a solution

[info](#) [Summary](#) [Submissions](#) [Standings](#) [Submit clar](#) [Clars](#) [Settings](#) [Logout \[ADS25_248031718\]](#)

21:08:42 / RUNNING

Submit a solution for C-Patchwork Staccato I

Time limit: 4 s

Real time limit: 8 s

Memory limit: 256K

Problem C: Patchwork Staccato I

You are given array a ($1 \leq a_i \leq 10^9$) of length n ($1 \leq n \leq 100$) and q ($1 \leq q \leq 100$) queries. In query i you are given two pairs of segments l_1, r_1, l_2, r_2 ($1 \leq l_1 \leq r_1 \leq 10^9, 1 \leq l_2 \leq r_2 \leq 10^9$), find number of indices e ($1 \leq e \leq n$) for which one of the following conditions is satisfied: $l_1 \leq a_e \leq r_1$ or $l_2 \leq a_e \leq r_2$.

Input format

First line contains two integers n, q . The next q lines contain 4 integers i_1, r_1, i_2, r_2 .

Output format

Output q lines - answers to the queries.

Examples

```

7 3
21 1 2 3 5 8 13
1 5 13 21
1 1 2 3
1 3 2 0

```

Output

625

[Submit a solution](#)

Language: g++ - GCC 13.1 c++17 ⚙

File	Выбрать файл	файл не выбран
Send	Send	

Previous submissions of this problem

Run ID	Time	Size	Problem	Language	Result	Failed test	View source	View report
--------	------	------	---------	----------	--------	-------------	-------------	-------------

Небезопасно — ejudge.kz

Submit a solution

Submit a solution

Info

Summary

Submissions

Standings

Submit clar

Clars

Settings

Logout [ADS25_248031718]

21:09:46 / RUNNING

A

B

C

D

E

F

G

H

I

J

K

Submit a solution for D-Patchwork Staccato II

Time limit: 6 s

Real time limit: 12 s

Memory limit: 256M

Problem D: Patchwork Staccato II

You are given array a ($1 \leq a_i \leq 10^9$) of length n ($1 \leq n \leq 10^5$) and q queries. In query i you are given two pairs of segments l_1, r_1, l_2, r_2 ($1 \leq l_1 \leq r_1 \leq 10^9, 1 \leq l_2 \leq r_2 \leq 10^9$), find number of indices c ($1 \leq c \leq n$) for which one of the following conditions is satisfied: $l_1 \leq a_c \leq r_1$ or $l_2 \leq a_c \leq r_2$.

Input format

First line contains two integers n, q . The next q lines contain 4 integers l_1, r_1, l_2, r_2 .

Output format

Output q lines - answers to the queries.

Examples

Input

7 3
21 1 2 3 5 8 13
1 5 13 21
1 1 2 3
1 3 2 8

Output

6
3
5

Submit a solution

Language:

G++ - GCC 13.1 c++17

File

Выбрать файл

Файл не выбран

Send

Send

Previous submissions of this problem

Run ID

Time

Size

Problem

Language

Result

Failed test

View source

View report

Небезопасно — ejudge.kz

Submit a solution for E-Jonathan the Farmer

Time limit: 5 s

Real time limit: 10 s

Memory limit: 256M

Problem E: Jonathan the Farmer

Jonathan is the Farmer whose household was damaged by a huge hurricane. He lost majority of his cattle. One day he walked near his farm and observed that there are N sheep on the field. Each sheep is always grazing inside some rectangular area. Jonathan remembered such areas for each sheep. When he came home, he decided to build a paddock to catch at least K sheepes (to catch a sheep Jonathan must cover sheep's pasture fully). Jonathan prefers squares rather than usual rectangles, therefore he want to build square paddock with the corner at point $(0, 0)$. Material for paddock costs money, so Jonathan wants to minimize the length of paddock side. He is not very good at math, please help him find this length.

Input format

The first line of the input contains two integers N and K ($1 \leq K \leq N \leq 2 \cdot 10^5$) - number of sheeps grazing in the field and the number of sheeps Jonathan wants to catch.

Each of the next N lines contain four integers $x_{i,1}, y_{i,1}, x_{i,2}, y_{i,2}$ ($1 \leq x_{i,1} < x_{i,2} \leq 10^9, 1 \leq y_{i,1} < y_{i,2} \leq 10^9$) - coordinates of bottom-left and top-right corners of the i -th sheep's pasture.

Output format

Find the minimum length of square paddock such that at least K sheeps' pastures fit there.

Examples

Input

10 7
3 1 7 8
1 3 5 4
5 8 9 10
7 1 8 5
9 1 10 5
4 4 7 5
1 6 7 7
5 7 9 10
4 8 5 9
4 2 5 3

Output

9

Input

10 2
7 4 8 9
7 7 8 8
4 3 6 7
4 1 8 6
4 2 10 5
1 3 2 10
6 8 7 9
7 5 8 6
4 4 8 5
4 1 5 2

Output

7

Submit a solution

Language:

g++ - GCC 13.1 c++17

Соренов Даниел Таймурын [AD5-Lab-03]: Submit a solution

Info Summary Submissions Standings Submit clar. Clers Settings Logout [AD525_248031718]

21:08:58 / RUNNING

A B C D E F G H I J K

Submit a solution for F-Win me if you cant

Time limit: 1 s
Real time limit: 5 s
Memory limit: 256M

Problem F: Win me if you cant

Mark is going to fight for Fight Club. There were N competitors with different powers. There will be P rounds to fight and in each round Mark's power will be changed. With power M , Mark can kill all the competitors whose power is equal to or less than his. Round by round, all the competitors who are dead in the previous round will be reborn. Such that in each round there will be N competitors to fight. As Mark is tired, please, help him to count the number of competitors that he can win in each round and the total sum of their powers.

Input format

The first line contains an integer N ($1 \leq N \leq 10^6$) - the number of competitors without Mark. Next line contains N integers a_i ($1 \leq a_i \leq 10^9$) - powers of these competitors. The third line contains one integer P ($1 \leq P \leq 10^6$) number of rounds. Each of the next P lines contains an integer p_i ($1 \leq p_i \leq 10^9$) - power of Mark at each round.

Output format

On each of the P lines print one integer - how many competitors Mark will win and the sum of their powers.

Examples

Input

```
7
7 9 1 8 2 5 2
2
4
8
```

Output

```
3 5
6 28
```

Submit a solution

Language: g++ - GCC 13.1 c++17

File: Выбрать файл Файл не выбран

Send

Previous submissions of this problem

The screenshot shows a web browser window displaying a programming competition page. The browser's address bar shows "Доступен перевод". The page header includes navigation links: "Info", "Summary", "Submissions", "Standings", "Submit clar.", "Clare", "Settings", and "Logout [AD525_24B031718]". Below the header, a status bar indicates "21-09-92 / RUNNING". A progress bar at the bottom shows the current position among problems A through K, with 'G' highlighted. The main content area is titled "Submit a solution for G-Santa Jonathan". It specifies limits: Time limit: 1 s, Real time limit: 3 s, Memory limit: 256M. The problem description states: "Christmas is coming! It means that each child living in the Duck Islands must receive a long-awaited gift. All children from the same island wish for a rubber duck of the same color (colors are distinct among all islands). During one flight Santa Jonathan can deliver gifts only of one color and the number of gifts that he can deliver at a time is restricted by the capacity of his bag. Santa Jonathan appreciates his time very much, so he wants to do no more than f flights. Please, help him find the least possible capacity of the bag to deliver all gifts during no more than f flights." The input format section explains: "The first line of the input contains two integers n and f - number of islands in the Duck Kingdom and number of flights (1 ≤ n ≤ f ≤ 10^5). The second line of the input contains n integers c_i - number of children in the i-th island (1 ≤ c_i ≤ 10^4)." The output format section says: "Please, find the least possible capacity of the bag that satisfies all conditions." Examples are provided: Input: 3 6, 10 10 10; Output: 3. Another example: Input: 5 7, 10 34 14 6 20; Output: 17. At the bottom, there is a "Submit a solution" button and a language selector set to "g++ - GCC 13.1 c++17".

Доступен перевод

Соревнование Тайпс Крикс [AOS-Lab-03]: Submit a solution

[Info](#)
[Summary](#)
[Submissions](#)
[Standings](#)
[Submit code](#)
[Clubs](#)
[Settings](#)
[Logout \[AOS25_24B031718\]](#)

21.09.97 / RUNNING

A	B	C	D	E	F	G	H	I	J	K
---	---	---	---	---	---	---	---	---	---	---

Submit a solution for H-Debugging

Time limit: 1 s
Real time limit: 3 s
Memory limit: 256M

Problem H: Debugging

Jonathan almost finished his project by Object-Oriented Programming course. His code consists of N consecutive blocks, each of them consists of a certain amount of lines. Unfortunately, Jonathan made a lot of mistakes. Compiler showed that Jonathan made M mistakes, each of them is described by the number of line where this mistake was made. To debug his project faster, Jonathan wants to define number of block in which he made a mistake. Please, help Jonathan debug his project before deadline will expire.

Input format

First line consists of integers N and M - number of blocks and mistakes ($1 \leq N, M \leq 2 \cdot 10^5$).
 The second line contains N integers a_i - number of lines in the i_{th} block ($1 \leq a_i \leq 10^4$).
 Each of the next M lines contains one integer b_j - number of line where the j_{th} mistake was made ($1 \leq b_j \leq 2 \cdot 10^9$).

Output format

Print M lines, the i_{th} line must contain the number of block in which the i_{th} mistake was made.

Examples

```

Input
2 1
3 4
5

Output
2

Input
3 1
5 7 6
9
10
15

Output
1
        
```

Notes

In the first sample lines [1, 3] belong to the first block and lines [4, 7] to the second. So, Jonathan will find mistake at the fifth line at the second block.
 In the second sample lines [1, 5], [6, 12], [13, 18] belong to the first, second and third blocks respectively. So, the fifth line is inside first block, the tenth line is inside second block and the fifteenth line is inside third block.

Hint: Think about implementing binary search function to solve this problem.

Hint: Build a new array p_i , where p_i is the line at which i_{th} block ends. You can notice, that this array is sorted.

Submit a solution

Language: g++ - GCC 13.1 c++17

Небезопасно — ejudge.kz

Submit a solution for I-75883. Binary search

Time limit: 1 s

Real time limit: 5 s

Memory limit: 256M

Problem I: 75883. Binary search

You are given a sorted array. Try to find number x from this array.

Input format

You are given n and m elements. After that, in the next line you are given a number x .

Output format

If the given number x is in this array, print Yes, else print No.

Examples

Input

5
1 2 3 4 5
1

Output

Yes

Input

5
1 2 3 4 5
2

Output

Yes

Input

5
1 2 3 4 5
7

Output

No

Input

5
1 2 3 4 5
10

Output

No

Input

5
1 2 3 4 5
5

Output

Yes

Submit a solution

Language:

g++ - GCC 13.1 c++17

21.09.19 / RUNNING

A B C D E F G H I J K

Submit a solution for J-Robin Hood stealing the Gold

Time limit: 1 s

Real time limit: 5 s

Memory limit: 256M

Problem J: Robin Hood stealing the Gold

Robin Hood wants to steal the golden bars from the bank of High Sheriff aiming to distribute them to poor local people. There are N bags of golden bars, the i -th bag has $\text{bag}[i]$ bars. Sheriff has gone and will return in H hours. Robin can steal K bars per hour. Each hour, he chooses a single bag of golden bars, and steals K bars from that bag. If there are less than K bars in the bag, he steals them all, and won't steal any more during this hour. Robin Hood wants to steal all of the golden bars before the Sheriff comes back. Returns the minimum number K such that Robin can steal ALL of the golden bars within H hours.

Input format

The first line of the input contains two space-separated integers $N(1 \leq N \leq 10^4)$, $H(N \leq H \leq 10^9)$, the number of bags of golden bars and the number of hours for which Sheriff has gone. The next line contains N space-separated integers $(1 \leq \text{bag}[i] \leq 10^9)$ denoting the number of golden bars in each bag.

Output format

Print the minimum number K such that Robin Hood can steal all of the N golden bars within the limit of H hours.

Examples

Input

4 8
3 6 7 11

Output

4

Input

5 5
30 11 23 4 20

Output

30

Input

5 6
30 11 23 4 20

Output

23

Notes

K is Robin's speed of stealing the bars such that $\sum_{i=1}^N \frac{\text{bag}[i]}{K} = H$.

If Robin can finish stealing all the bars (within H hours) with speed of K , he can finish with a larger speed too.

If we let $\text{possible}(K)$ be true if and only if Robin can finish with a speed of K , then there is some X such that $\text{possible}(K) = \text{true}$ if and only if $K \geq X$.

For the first test case there is some $X = 4$ so that $\text{possible}(1) = \text{possible}(2) = \text{possible}(3) = \text{false}$, and $\text{possible}(4) = \text{possible}(5) = \dots = \text{true}$. $K = 4$ is the minimum K such that $\frac{3}{4} + \frac{6}{4} + \frac{7}{4} + \frac{11}{4} = 1 + 2 + 2 + 3 = 8$. $K = 5$ is also a right answer but it is not a minimum K .

Submit a solution

Language: g++ - GCC 13.1 c++17

Submit a solution for K-K-subarray
Time limit: 1 s
Real time limit: 5 s
Memory limit: 256M

Problem K: K-subarray

You are given an array of non-negative integers and a number k . Let's define subarray as a non-empty consecutive elements of an array. Among all subarrays of the given array, find the one, such that sum of its elements is not less than k and such that this subarray would contain minimum possible number of elements.

Input format

First line contains two space-separated numbers n k — number of elements in given array and number that was mentioned above, respectively ($1 \leq n \leq 10^5$, $0 \leq k \leq 10^9$).
Second line contains n space-separated numbers a_1, a_2, \dots, a_n — given array ($0 \leq a_i \leq 10^4$).
It is guaranteed that at least one subarray's sum is not less than k .

Output format

Output single number x — minimum possible number of elements of some subarray, such that sum of elements of this subarray is not less than k .

Examples

Input	3 12 3 5 7
Output	2
Input	6 19 3 6 1 4 5 2
Output	5

Notes

In the first test case we have three elements. Subarrays are [3], [3, 5], [3, 5, 7], [5], [3, 7], [7]. Only two subarrays have sum that is not less than $k = 12$: [3, 5, 7], [5, 7]. Out of these two subarrays, [5, 7] has minimum possible length of 2.

Hint

For a fixed left end of subarray, sums of subarray increase, if we increase number of elements in it. So we can do binary search on right end of subarray for a fixed left end.
In order to quickly know sum of subarray we can calculate prefix sums. For example for the given array from the first test case prefix sums would be [3, 8, 15]. In order to get sum of second and third element, from prefix sum at position 3 we subtract prefix sum at position 1: $15 - 3 = 12$.

Submit a solution

Language:

g++ - GCC 13.1 c++17

?