Problem Solving

Prefix Sums, Difference Arrays

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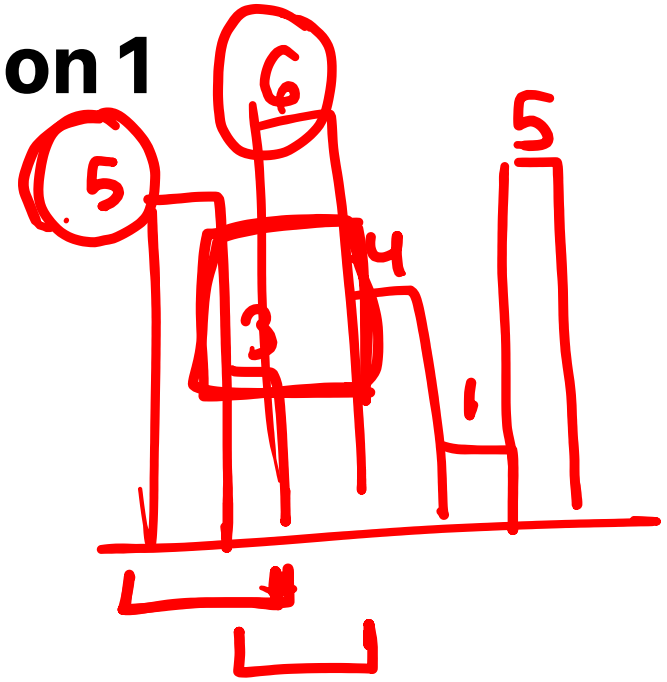
Problems

- Link 1
- Link 2
- Link 3
- Link 4

Discussion 1



k = 2

(deque
vector arr..
prefix sum)

sum = 8 − 5 + 6

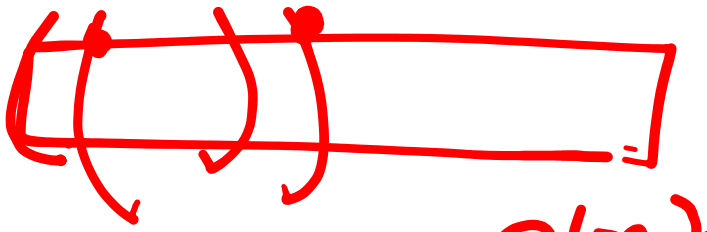
min

over all windows

we can just loop

O(n)

O(1) and find the min



O(n)

Discussion 2

Q. array of numbers → n.
and you have to find
max gcd by excluding ith numbers

A. GCD

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

Bob is given an array of n elements. He wants to find the GCD (greatest common divisor) of the numbers in the array. But he wants to maximize this, so he is allowed to leave out one of the numbers in the array and take GCD of the remaining elements.

Find the maximum GCD that can be obtained.

Input

Input consists of two lines.

The first line contains n $(1 \leq n \leq 100000)$, the size of the array.

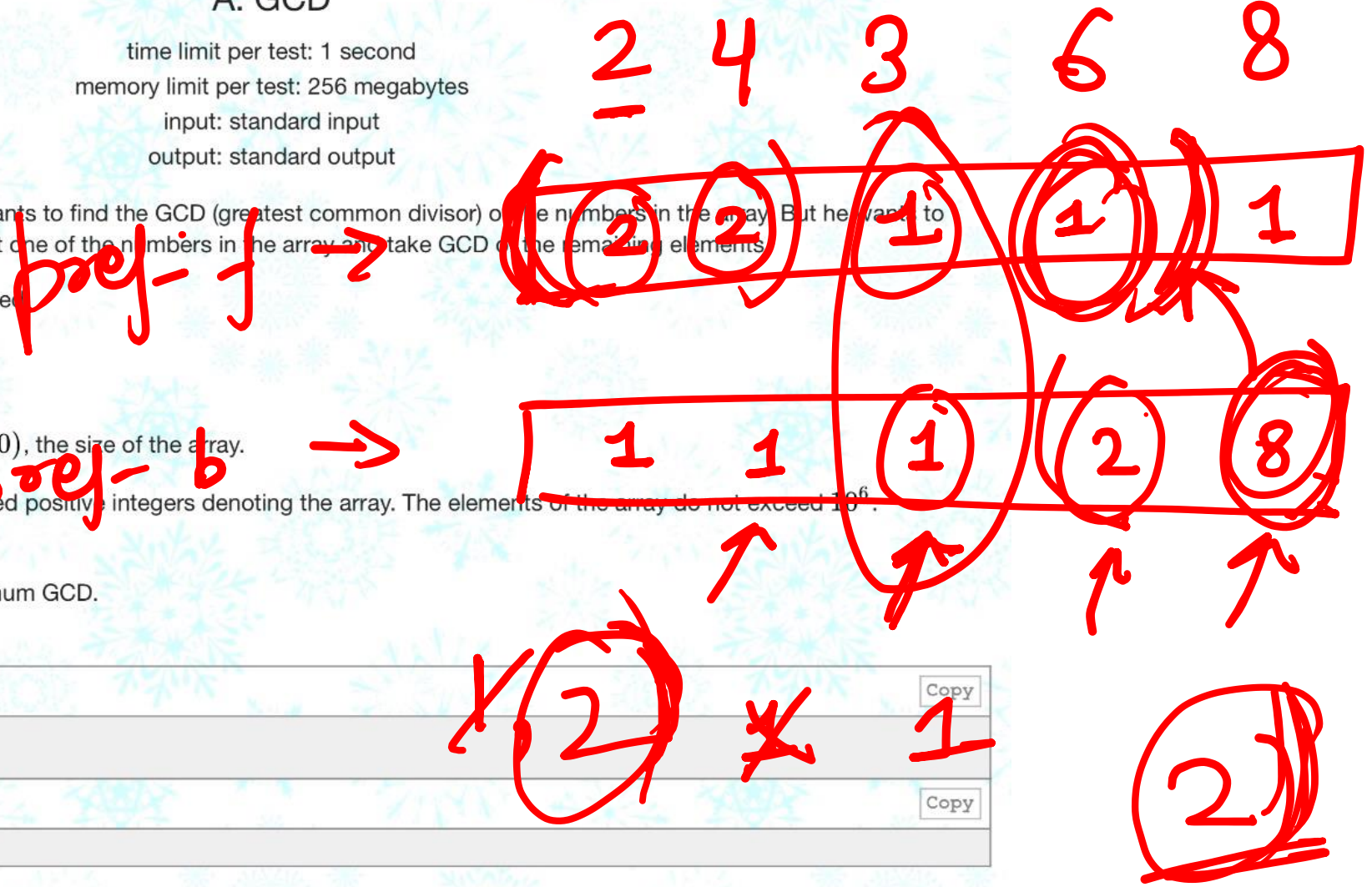
The second line contains n space separated positive integers denoting the array. The elements of the array do not exceed 10^6.

Output

Output a single integer denoting the maximum GCD.

Example

input	Copy
5 2 4 3 6 8	
output	**Copy**
2	

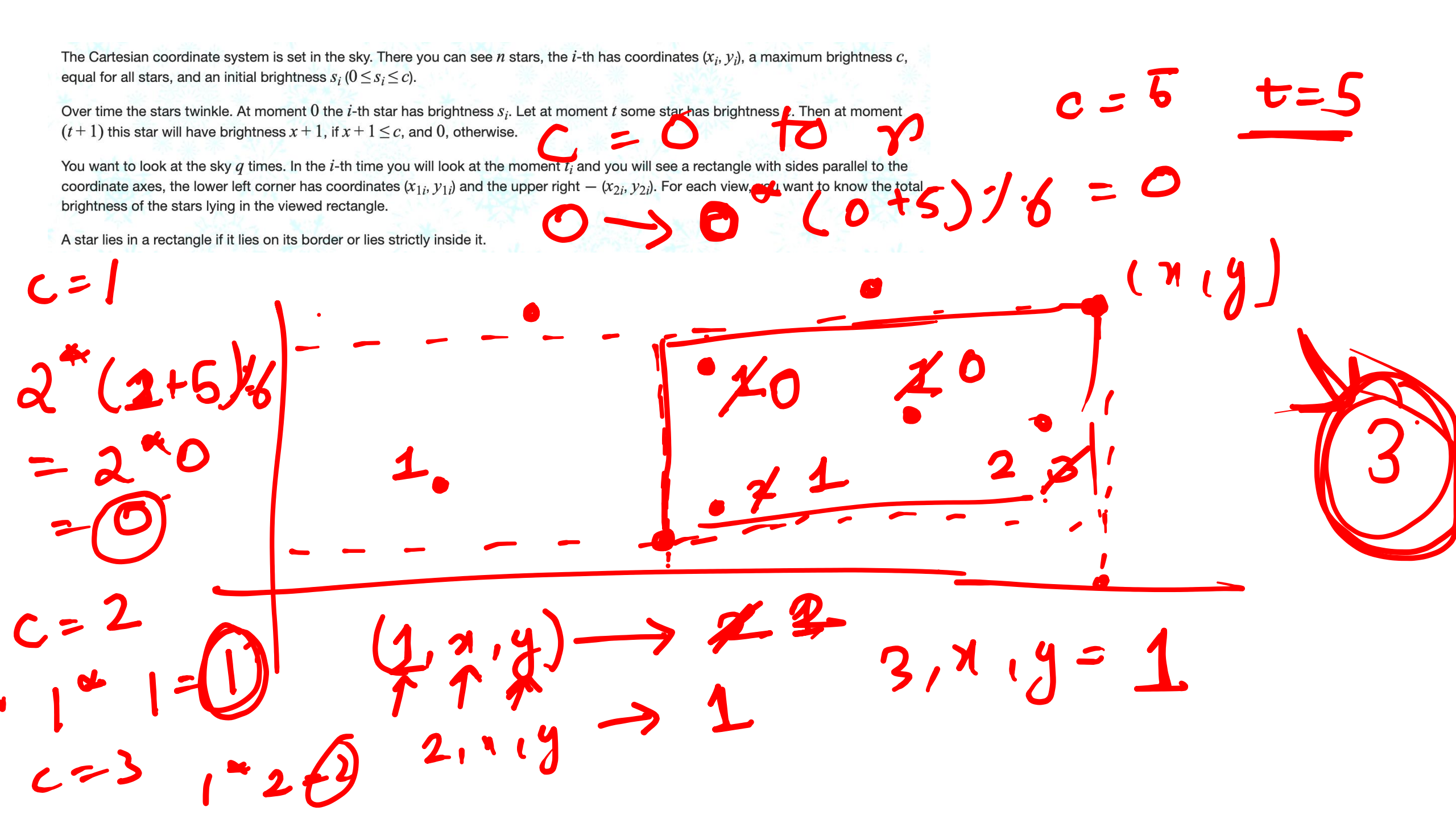


The Cartesian coordinate system is set in the sky. There you can see n stars, the i-th has coordinates (x_i, y_i), a maximum brightness c, equal for all stars, and an initial brightness s_i $(0 \le s_i \le c)$.

Over time the stars twinkle. At moment 0 the i-th star has brightness s_i. Let at moment t some star has brightness x. Then at moment $(t+1)$ this star will have brightness $x+1$, if $x+1 \le c$, and 0, otherwise.

You want to look at the sky q times. In the i-th time you will look at the moment t_i and you will see a rectangle with sides parallel to the coordinate axes, the lower left corner has coordinates (x_{1i}, y_{1i}) and the upper right — (x_{2i}, y_{2i}). For each view, you want to know the total brightness of the stars lying in the viewed rectangle.

A star lies in a rectangle if it lies on its border or lies strictly inside it.



$pref_{s,x,y}$ → no. of stars in 1,1 to x,y with initial brightness (S)

$S = (0 \text{ to } c)$ → count of the* brightness they will attain after t time