Contest Starts in :

00 : 10 : 41 : 25
DAYS HOURS MINS SECS

Registered !

MaTPO PROGRAMMING IDOL-2023 (Slot-1)

3 Questions | 150 Marks | From 18 Mar 2023 10:00 AM(IST) to 18 Mar 2023 12:00 PM(IST)

The contest is of **2 Hours** duration with questions from Programming and Data Structures & Algorithms. Good Luck!

Instructions for the Contest

1. Languages supported for the contest are: C++, Java, Python.
2. Each submission will be tested based on our critical test data.
3. There is a 5% penalty for each wrong submission. For example, if a problem is of 100 marks and a participant makes a wrong submission, his marks are reduced to 95. After the next wrong submission of the same problem, his marks are further reduced to 90.25 and so on. Therefore, it is suggested to use 'Compile & Test' against sample test cases before each submission.
4. Each question has hints that you may use when you're stuck on a problem. Marks are deducted on hints usage.
5. Please refrain from discussing strategy during the contest. All submissions are run through a plagiarism detector. Any case of code plagiarism will reduce the score of the concerned participants to 0.
6. Make sure other participants don't have access to your code. In case you are using any other online coding environment, you are responsible for the privacy of your code.
7. It is advised to attempt the Sample Geeks Challenge to get familiar with the GeeksforGeeks coding environment.

Coding Problem Details

Solve as many problem(s) as you can before the time runs out and based on the accuracy of your correct submission you will get the scores.

3 Questions 150 Marks

Steady Array

Accuracy: 0.0% Submissions: 0 Points: 40

Given an array **A[ ]** of size **N**. You have to determine if you can make the array **A[ ]** a **steady array.** It is given that you can replace **atmost one element** with its additive inverse

> **Note:** the additive inverse of a number **a** is the number that, when added to **a**, yields zero.
>
> An array is called a **Steady array** if sum of all elements in it is 0.

If you can make the array **A[ ]** a **steady array** then return "YES" otherwise "NO"**.**

Example 1:

```
Input:
N = 4
A[] = {1, 3, 4, -8}
Output:
YES
Explanation:
The sum of all elements is already 0.
```

Example 2:

```
Input:
N = 2
A[] = {1, 2}
Output:
NO
Explanation:
Replacing first element with its
additive inverse -> {-1, 2}, sum is 1≠0.
Replacing second element with its
additive inverse -> {1, -2}, sum is -1≠0.
```

Your Task:
You don't need to read, input, or print anything. Your task is to complete the function **solve( )** which takes **N** and **A[ ]** as input parameters and returns the string "YES" or "NO".

Constraints:
$2 \leq N \leq 2*10^5$
$-10^9 \leq A[i] \leq 10^9$

Pairs of number and their LCM and GCD

Accuracy: 0.0% Submissions: 0 Points: 50

Find any two numbers such that their LCM/GCD equals **K**

Note: You can't choose 1 or K as one of your numbers.

> ***GCD*** of two nonzero integers a and b is the greatest positive integer d such that d is a divisor of both a and b.
>
> ***LCM*** of two nonzero integers a and b is the "smallest non-zero common number" which is a multiple of both the numbers.

Example 1:

```
Input:
K=6
Output:
(2,3)
Explanation:
GCD of 2 and 3 is 1 and their
LCM is 6 , therefore LCM/GCD=K.
```

Example 2:

```
Input:
K=15
Output:
(3,5)
Explanation:
GCD of 3 and 5 is 1 and their
LCM is 15 , therefore LCM/GCD=K.
```

Your Task:
You don't need to read input, or print anything. Your task is to complete the function **solve( ),** which takes an integer **K** as the input parameter and returns an array containing your chosen pair of numbers.
Note: You can use the function gcd(a,b) to calculate gcd of a and b. The generated output will depict if your returning answer is correct or wrong.

Constraints:
$1<=K<=10^{16}$

Unique Largest element

Accuracy: 0.0% Submissions: 0 Points: 60

Given an array **ar** of size, **N**.You have to find if any element in this array is strictly greater than all other elements. Return **1** if any such element exists else return **0.**

Note: If size of the array is 1 then you have to return 1.

Example 1:

```
Input:
N=2
ar[]={2,3}
Output:
1
Explanation:
3 is greater than all other
element.
```

Example 2:

```
Input:
N=4
ar[]={2,1,0,2}
Output:
0
Explanation:
There is no such element which is
greater than all other elements.
```

Your Task:
You don't need to read input or print anything. Your task is to complete the function **solve( ),** which takes an integer **N** and array **ar** as the input parameters and returns **1** if any such element exists else returns **0**.

Constraints:
$1<=N<=10^6$

$0<=a[i]<=10^9$