

Question 1

Correct

Marked out of 3.00

Flag question

Given an array A of sorted integers and another non negative integer k, find if there exists 2 indices i and j such that $A[i] - A[j] = k$, $i \neq j$.

Input Format

1. First line is number of test cases T. Following T lines contain:
2. N, followed by N integers of the array
3. The non-negative integer k

Output format

Print 1 if such a pair exists and 0 if it doesn't.

Example

Input:

```
1
3 1 3 5
4
```

Output:

```
1
```

Input:

```
1
3 1 3 5
99
```

Answer: (penalty regime: 0 %)

SOURCE CODE

```
1 #include<stdio.h>
2 int main()
3 {
4     int t;
5     scanf("%d",&t);
6     while(t--){
7         int n;
8         scanf("%d",&n);
9         int a[n];
10        for(int i=0;i<n;i++)
11        {
12            scanf("%d",&a[i]);
13        }
14        int k;
15        scanf("%d",&k);
16        int flag=0;
17        for(int i=0;i<n;i++)
18        {
19            for(int j=i+1;j<n;j++){
20                if((a[i]-a[j]==k)|| (a[j]-a[i]==k)){flag=1;break;}
21            }
22        }
23        if(flag)
24            break;
25    }
26    printf("%d\n",flag);
27 }
28 }
29 return 0;
30 }
```

RESULT

	Input	Expected	Got	
✓	1 3 1 3 5 4	1	1	✓
✓	1 3 1 3 5 99	0	0	✓

Question 2
Correct
Marked out of
5.00
Flag
question

Sam loves chocolates and starts buying them on the 1st day of the year. Each day of the year, x , is numbered from 1 to Y . On days when x is odd, Sam will buy x chocolates; on days when x is even, Sam will not purchase any chocolates.

Complete the code in the editor so that for each day N_i (where $1 \leq x \leq N \leq Y$) in array arr , the number of chocolates Sam purchased (during days 1 through N) is printed on a new line. This is a function-only challenge, so input is handled

Input Format

The program takes an array of integers as a parameter.

The locked code in the editor handles reading the following input from `stdin`, assembling it into an array of integers (`arr`), and calling `calculate(arr)`.

The first line of input contains an integer, T (the number of test cases). Each line i of the T subsequent lines describes the i th test case as an integer, N_i (the number of days).

Constraints

$1 \leq T \leq 2 \times 10^5$

$1 \leq N \leq 2 \times 10^6$

$1 \leq x \leq N \leq Y$

Output Format

For each test case, T_i in `arr`, your `calculate` method should print the total number of chocolates Sam purchased by day N_i on a new line.

Sample Input 0

3

1

2

3

Sample Output 0

SOURCE CODE

Answer: (penalty regime: 0 %)

```
1 #include<stdio.h>
2 int main()
3 {
4     int n;
5     scanf("%d",&n);
6     int arr[n];
7     for(int i=0;i<n;i++)
8     {
9         scanf("%d",&arr[i]);
10        int a=arr[i],sum=0;
11        for(int j=1;j<=a;j++)
12        {
13            if(j%2==1){
14                sum+=j;
15            }
16        }
17        printf("%d\n",sum);
18    }
19 }
```

RESULT

	Input	Expected	Got	
✓	3	1	1	✓
	1	1	1	
	2	4	4	
	3			
✓	10	1296	1296	✓
	71	2500	2500	
	100	1849	1849	
	86	729	729	
	54	400	400	
	40	25	25	
	9	1521	1521	
	77	25	25	
	9	49	49	
	13	2401	2401	
	98			

Question 3

Correct

Marked out of 7.00

Flag question

The number of goals achieved by two football teams in matches in a league is given in the form of two lists. Consider:

- Football team A, has played three matches, and has scored { 1, 2, 3 } goals in each match respectively.
- Football team B, has played two matches, and has scored { 2, 4 } goals in each match respectively.
- Your task is to compute, for each match of team B, the total number of matches of team A, where team A has scored less than or equal to the number of goals scored by team B in that match.

In the above case:

- For 2 goals scored by team B in its first match, team A has 2 matches with scores 1 and 2.
- For 4 goals scored by team B in its second match, team A has 3 matches with scores 1, 2 and 3.

Hence, the answer: {2, 3}.

Complete the code in the editor below. The program must return an array of m positive integers, one for each maxes[i] representing the total number of elements nums[j] satisfying $\text{nums}[j] \leq \text{maxes}[i]$ where $0 \leq j < n$ and $0 \leq i < m$, in the

It has the following:

```
nums[nums[0]...nums[n-1]]: first array of positive integers
maxes[maxes[0]...maxes[m-1]]: second array of positive integers
```

Constraints

- $2 \leq n, m \leq 105$
- $1 \leq \text{nums}[j] \leq 105$, where $0 \leq j < n$.
- $1 \leq \text{maxes}[i] \leq 105$, where $0 \leq i < m$.

Input Format For Custom Testing

Input from stdin will be processed as follows and passed to the function.

The first line contains an integer n, the number of elements in nums.

The next n lines each contain an integer describing nums[j] where $0 \leq j < n$.

The next line contains an integer m, the number of elements in maxes.

Sample Case 0

Sample Input 0

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

Sample Output 0

```
2
4
```

Explanation 0

We are given $n = 4$, $\text{nums} = [1, 4, 2, 4]$, $m = 2$, and $\text{maxes} = [3, 5]$.

- For $\text{maxes}[0] = 3$, we have 2 elements in nums ($\text{nums}[0] = 1$ and $\text{nums}[2] = 2$) that are $\leq \text{maxes}[0]$.
- For $\text{maxes}[1] = 5$, we have 4 elements in nums ($\text{nums}[0] = 1$, $\text{nums}[1] = 4$, $\text{nums}[2] = 2$, and $\text{nums}[3] = 4$) that are $\leq \text{maxes}[1]$.

Thus, the function returns the array [2, 4] as the answer.

Sample Case 1

Sample Input 1

1
0
3
4

Explanation 1

We are given, n = 5, nums = [2, 10, 5, 4, 8], m = 4, and maxes = [3, 1, 7, 8].

- 1. For maxes[0] = 3, we have 1 element in nums (nums[0] = 2) that is ≤ maxes[0].
- 2. For maxes[1] = 1, there are 0 elements in nums that are ≤ maxes[1].
- 3. For maxes[2] = 7, we have 3 elements in nums (nums[0] = 2, nums[2] = 5, and nums[3] = 4) that are ≤ maxes[2].
- 4. For maxes[3] = 8, we have 4 elements in nums (nums[0] = 2, nums[2] = 5, nums[3] = 4, and nums[4] = 8) that are ≤ maxes[3].

Thus, the function returns the array [1, 0, 3, 4] as the answer.

Answer: (penalty regime: 0 %)

SOURCE CODE

```
1 #include<stdio.h>
2 int main()
3 {
4     int n,m;
5     scanf("%d",&n);
6     int num[n];
7     for(int i=0;i<n;i++)
8     {
9         scanf("%d",&num[i]);
10    }
11    scanf("%d",&m);
12    int max[m],result[m];
13    for(int i=0;i<m;i++){
14        scanf("%d",&max[i]);
15    }
16    for(int i=0;i<m;i++)
17    {
18        int c=0;
19        for(int j=0;j<n;j++)
20        {
21            if(num[j]<=max[i]){
22                c++;
23            }
24        }
25        result[i]=c;
26    }
27    for(int i=0;i<m;i++)
28    {
29        printf("%d\n",result[i]);
30    }
31    return 0;
32 }
```

RESULT

	Input	Expected	Got	
✓	4 1 4 2 4 2 3 5	2 4	2 4	✓
✓	5 2 10 5 4 8 4 3 1 7 8	1 0 3 4	1 0 3 4	✓

Passed all tests! ✓