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Status	Finished
Started	Tuesday, 24 December 2024, 10:24 AM
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Question 1

Correct

Marked out of 3.00

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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

- 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

Output:

0

Answer: (penalty regime: 0 %)

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

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

Passed all tests! ✓

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

Passed all tests! ✓

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_i) is printed on a new line. This is a function-only challenge, so input is handled for you by the locked stub code in the editor.

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

```
1
1
4
```

Explanation

Test Case 0: $N = 1$

Sam buys 1 chocolate on day 1, giving us a total of 1 chocolate. Thus, we print 1 on a new line.

Test Case 1: $N = 2$

Sam buys 1 chocolate on day 1 and 0 on day 2. This gives us a total of 1 chocolate. Thus, we print 1 on a new line.

Test Case 2: $N = 3$

Sam buys 1 chocolate on day 1, 0 on day 2, and 3 on day 3. This gives us a total of 4 chocolates. Thus, we print 4 on a new line.

Answer: (penalty regime: 0 %)

```
1 #include<stdio.h>
2 void nhoc(int a[],int T){
3     for(int i=0;i<T;i++){
4         int N=a[i];
5         int sum=0;
6         for(int day=1;day<=N;day+=2){
7             sum+=day;
8         }
9         printf("%d\n",sum);
10    }
11 }
12 int main(){
13     int T;
14     scanf("%d",&T);
15     int a[T];
16     for(int i=0;i<T;i++){
17         scanf("%d",&a[i]);
18     }
19     nhoc(a,T);
20     return 0;
21 }
```

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

Passed all tests! ✓

4
1
4
2
4
2
3
5

Sample Output 0

2
4

Explanation 0

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

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

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

Sample Case 1

Sample Input 1

5
2
10
5
4
8
4
3
1
7
8

Sample Output 1

1
0
3
4

Explanation 1

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

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

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

Answer: (penalty regime: 0 %)

```
1 #include<stdio.h>
2 int main(){
3     int n,m;
4     scanf("%d",&n);
5     int nums[n];
6     for(int i=0;i<n;i++){
7         scanf("%d",&nums[i]);
8     }
9     scanf("%d",&m);
10    int maxes[m];
11    for(int i=0;i<m;i++){
12        scanf("%d",&maxes[i]);
13    }
14    for(int i=0;i<m;i++){
15        int count=0;
16        for(int j=0;j<n;j++){
17            if(nums[j]<=maxes[i]) count++;
18        }
19        printf("%d\n",count);
20    }
21    return 0;
22 }
```

	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! ✓

Finish review