

**Status** Finished

**Started** Monday, 23 December 2024, 5:33 PM

**Completed** Tuesday, 3 December 2024, 9:23 AM

**Duration** 20 days 8 hours

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

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

```

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

```

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

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

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

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

Answer: (penalty regime: 0 %)

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

	Input	Expected	Got	
✓	3	1	1	✓
	1	1	1	
	2	4	4	
	3			

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  $\text{maxes}[i]$  representing the total number of elements  $\text{nums}[j]$  satisfying  $\text{nums}[j] \leq \text{maxes}[i]$  where  $0 \leq j < n$  and  $0 \leq i < m$ , in the given order.

It has the following:

`nums[nums[0],...nums[n-1]]`: first array of positive integers

`maxes[maxes[0],...maxes[n-1]]`: second array of positive integers

Constraints

```

1 #include<stdio.h>
2 int main()
3 {
4     int s1,s2,ans;
5     scanf("%d",&s1);
6     int ta[s1];
7     for(int i=0;i<s1;i++){
8         scanf("%d",&ta[i]);
9         scanf("%d",&s2);
10        int tb[s2];
11        for(int i=0;i<s2;i++)
12            scanf("%d",&tb[i]);
13        for(int j=0;j<s2;j++){
14            ans=0;
15            for(int i=0;i<s1;i++){
16                if(tb[j]>=ta[i])
17                    ans++;
18            }printf("%d\n",ans);
19        }return 0;
20    }
21
22
23
24
25 }

```

	Input	Expected	Got	
✓	4	2	2	✓
	1	4	4	
	4			
	2			
	4			
	2			
	3			