


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

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

```

32     else
33     {
34         printf("0");
35         printf("\n");
36     }
37 }
38 return 0;
39 }

```


	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) 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

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

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

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

- $2 \leq n, m \leq 105$
- $1 \leq \text{nums}[j] \leq 109$, where $0 \leq j < n$.
- $1 \leq \text{maxes}[i] \leq 109$, 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`.

The next m lines each contain an integer describing `maxes[i]` where $0 \leq i < m$.

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

	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! ✓