

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

```

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

```

	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 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
```

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            {
15                sum+=j;
16            }
17        }
18        printf("%d\n",sum);
19    }
20 }
```

	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 $nums[j] \leq maxes[i]$ 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[m-1]]`: second array of positive integers

Constraints

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

Input Format For Custom Testing

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

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 {
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    {
15        scanf("%d",&max[i]);
16    }
17    for(int i=0;i<m;i++)
18    {
19        int c=0;
20        for(int j=0;j<n;j++)
21        {
22            if(num[j]<=max[i])
23                c++;
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 }
```

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

Passed all tests! ✓