

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
```

Answer: (penalty regime: 0 %)

```
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;
19                     break;
20                 }
21             }
22             if(flag)
23                 break;
24         }
25         printf("%d\n",flag);
26     }
27     return 0;
28 }
29
30
```

	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

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

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

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

Answer: (penalty regime: 0 %)

```

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

$nums[nums[0] \dots nums[n-1]]$: first array of positive integers

$maxes[maxes[0] \dots maxes[m-1]]$: 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 $0 \leq i < m$.

Answer: (penalty regime: 0 %)

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