One-DimensionalArrays

Ex.No.: **Date:**

Checkpairwithdifferencek

ProblemStatement:

GivenanarrayAofsortedintegersandanothernonnegativeintegerk,findifthere exists 2 indices i and j such that A[i] - A[j] = k, i != j.

InputFormat
1. FirstlineisnumberoftestcasesT.FollowingTlinescontain:
2. N,followedbyNintegersofthearray
3. Thenon-negativeintegerk

Outputformat
Print1ifsuchapairexistsand0ifitdoesn't.

SampleInput:
1
3135
4

Sample Output:
1

Program:

```c
#include<stdio.h>
int main()
{
    int t;
    scanf("%d",&t);
    while(t--)
    {
        int n;
        scanf("%d",&n);
        int a[n];
        for(int i=0;i<n;i++)
        {
            scanf("%d",&a[i]);
        }
        int k;
        scanf("%d",&k);
        int flag=0;
        for(int i=0;i<n;i++)
        {
            for(int j=i+1;j<n;j++)
            {
                if(a[i]-a[j]==k||a[j]-a[i]
                {
                    flag=1;break;}

                }
                if(flag) break;
            }
            printf("%d\n",flag);
        }


    }

```

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

Passed all tests! ✓

Ex.No.: **Date:**

Chocolates

ProblemStatement:

Samloveschocolatesandstartsbuyingthemonthe1stdayoftheyear.Eachdayofthe year,x,isnumberedfrom1toY.Ondayswhenxisodd,Samwillbuyxchocolates;on days when x is even, Sam will not purchase any chocolates.

Complete the code in the editor so that foreach day Ni (where 1 ≤x ≤ N≤ Y) in array arr,thenumberofchocolatesSampurchased(duringdays1throughN)isprintedona newline.Thisisafunction-onlychallenge,soinputishandledforyoubythelockedstub code in the editor.

InputFormat
Theprogramtakesanarrayofintegersasaparameter.

Thelockedcodeintheeditorhandlesreadingthefollowinginputfromstdin,assembling it into an array ofintegers (arr),and calling calculate(arr).

Thefirstlineofinputcontainsaninteger,T(thenumberoftestcases).Eachlineiof theTsubsequentlinesdescribestheithtestcaseasaninteger,Ni(thenumberofdays).

Constraints
1≤T≤2×105
1≤N≤2×106
1≤x≤N≤Y

OutputFormat
Foreachtestcase,Tiinarr,yourcalculatemethodshouldprintthetotalnumberof chocolates Sam purchased by day Ni on a new line.

SampleInput0
3
1
2
3

SampleOutput0
1
1
4

Program:

```c
#include<stdio.h>
int main()
{
    int t;
    scanf("%d",&t);
    while(t--)
    {
        int n,c=0;
        scanf("%d",&n);
        for(int i=0;i<=n;i++)
        {
            if(i%2!=0)
            c=c+i;
        }printf("%d\n",c);


    }
}
```

	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! ✓

Ex.No.: **Date:**

FootballScores

ProblemStatement:

Thenumberofgoalsachievedbytwofootballteamsinmatchesinaleagueisgiveninthe form of two lists. Consider:

- FootballteamA,hasplayedthreematches,andhasscored{1,2,3}goalsineachmatch respectively.
- FootballteamB,hasplayedtwomatches,andhasscored{2,4}goalsineachmatch respectively.
- Yourtaskistocompute,foreachmatchofteamB,thetotalnumberofmatchesofteamA,
- whereteamAhasscoredlessthanorequaltothenumberofgoalsscoredbyteamBin that match.

Intheabovecase:

- For2goalsscoredbyteamBinitsfirstmatch,teamAhas2matcheswithscores1and2.
- For4goalsscoredbyteamBinitssecondmatch,teamAhas3 matcheswithscores1, 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] ≤ maxes[i] where 0 ≤ j < n and 0 ≤ i < m, in the given order.

Ithasthefollowing:

nums[nums[0],...nums[n-1]]:firstarrayofpositiveintegers
maxes[maxes[0],...maxes[n-1]]:secondarrayofpositiveintegers

Constraints:
2≤n,m≤105,1≤nums[j]≤109,where0≤j<n,1≤maxes[i]≤109,where0≤i< m.

InputFormatForCustom Testing
Inputfromstdinwillbeprocessedasfollowsandpassedtothefunction.
Thefirstlinecontainsanintegern,thenumberofelementsinnums.
Thenextnlineseachcontainanintegerdescribingnums[j]where0≤j<n. Thenext line containsan integerm, thenumber of elements in maxes.
Thenextmlineseachcontainanintegerdescribingmaxes[i]where0≤i<m.

SampleInput
4
1
4
2
4
2
3
5

Sample Output
2
4

Program:

```c
#include<stdio.h>
int main()
{
    int n=1,i=0,nt,co=0,e;
    scanf("%d",&e);
    while(i<e)
    {
        nt=n;
        while(nt!=0)
        {
            co=0;
            if(nt%10!=3 && nt%10!=4)
            {
                co=1;
                break;

            }
            nt=nt/10;
        }
            if(co==0)
            {
                i++;
            }
            n++;
        }
        printf("%d",--n);

}
```

	Input	Expected	Got	
✓	34	33344	33344	✓

Passed all tests! ✓