```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 i=0,j=1,found =0;
        while(i<n&&j<n)
        {
            int diff=a[j]-a[i];
            if(i!=j&&diff==k)
            {
                found=1;
                break;
            }
            else if(diff<k)
            j++;
            else
            i++;
        }
        printf("%d\n",found);
    }
    return 0;
}
```

```c
#include<stdio.h>
void calculate(int arr[],int t)
{
    for (int i=0;i<t;i++)
    {
        long long n=arr[i];
        long long k=(n+1)/2;
        printf("%lld\n",k*k);
    }
}
int main()
{
    int t;
    scanf("%d",&t);
    int arr[t];
    for(int i=0;i<t;i++)
    {
        scanf("%d",&arr[i]);
    }
    calculate(arr,t);
    return 0;
}
```

```c
include<stdio.h>
include<stdlib.h>
nt compare(const void *a,const void *b)
{
    return (*(int *)a-*(int *)b);

nt upper(int arr[],int n,int key)
{
    int low=0,high=n;
    while(low<high)
    {
        int mid=(low+high)/2;
        if(arr[mid]<=key)
        low=mid+1;
        else
        high=mid;
    }
    return low;

nt main()
{
    int n,m;
    scanf("%d",&n);
    int nums[n];
    for(int i=0;i<n;i++)
    scanf("%d",&nums[i]);
    scanf("%d",&m);
    int maxes[m];
    for(int i=0;i<m;i++)
    scanf("%d",&maxes[i]);
    qsort(nums,n,sizeof(int),compare...
    for(int i=0;i<m;i++)
    {
        int count=upper(nums,n,maxes[i]);
        printf("%d\n",count);
    }
    return 0;
```