exam problem

- test cases-2
- array size-5
- k(frequency)-1

In [1]:
```
def khighestnumber(N,k):
    l=[]
    n1=max(N)
    n2=min(N)
    for j in range(n2,n1+1):
        l.append(j)
        l=sorted(l)
        li=l[::-1]

    if len(li)>k:
        return(li[k-1])
    return "-1"



t=int(input())
for i in range(t):
    a=int(input())
    N=list(map(int,input().split()))
    #print(N)
    k=int(input())
    #print(k)
    print(khighestnumber(N,k))
```

```
2
5
1 2 3 4 5
3
3
4
1 8 6 4
2
7
```

In [5]:
```
def ksmallestnumber(N,k):
    l=[]
    n1=max(N)
    n2=min(N)
    for j in range(n2,n1+1):
        l.append(j)
        l=sorted(l)
        #li=l[::-1]

    if len(l)>k:
        return(l[k-1])
    return "-1"



t=int(input())
for i in range(t):
    a=int(input())
    N=list(map(int,input().split()))
    #print(N)
    k=int(input())
    #print(k)
    print(ksmallestnumber(N,k))
```

```
1
2
1 5
3
3
```

In [21]:
```
#Function to identify the element with highest frequency
#if any element have the highest frequency ,return the smallest element
#highest frequency([1,2,3,9,8,7,4,2,1])
#Function to find minimum and maximum

def highestfrequency(li):
    d={}

    for i in li:
        if i in d:
            d[i]+=1
        else:
            d[i]=1
    fr=set(d.values())
    print(fr)
    maxfr=max(fr)
    print(maxfr)
    #minfr=min(fr)
    #print(minfr)
    maxfreq=[]
    for values in d.items():
        if values[1]==maxfr:#in item there are key and value ,we want value so we
            maxfreq.append(values[0])
    return min(maxfreq)
    #return max(maxfreq)

highestfrequency([1,2,3,2,1])
```

```
{1, 2}
2
```

Out[21]: 1

In [22]:
```
#To find kth frequency
def smallestfrequency(li):
    d={}

    for i in li:
        if i in d:
            d[i]+=1
        else:
            d[i]=1
    fr=set(d.values())

    maxfr=max(fr)
    #print(maxfr)

    maxfreq=[]
    for values in d.items():
        if values[1]==maxfr:#in item there are key and value ,we want value so we
            maxfreq.append(values[0])
    # select minimum from the maximum frequency
    maxfreq=sorted(maxfreq)
    print(maxfreq)
    if len(maxfreq)>=k:
        return maxfreq[k-1]
    return -1

smallestfrequency([1,2,3,2,1])
```

```
[1, 2]
```

Out[22]:
```
-1
```

In [67]:
```
#Function to find second highest frequency
def secondhighestfrequency(li):
    d={}

    for i in li:
        if i in d:
            d[i]+=1
        else:
            d[i]=1
    print(d)
    fr=sorted(set(d.values()),reverse=True)
    print(fr)
    maxfreq=[]
    for values in d.items():
        if values[1]==fr[1]:
            maxfreq.append(values[0])
            #print(maxfreq)
            return min(maxfreq)
    return "-1"



secondhighestfrequency([1,2,3,2,1,4,4,9])
```

```
{1: 2, 2: 2, 3: 1, 4: 2, 9: 1}
[2, 1]
```

Out[67]: 3

In [84]:
```
#Function to find kth highest frequency
def kthhighestfrequency(li,k):
    d={}

    for i in li:
        if i in d:
            d[i]+=1
        else:
            d[i]=1
    print(d)
    fr=sorted(set(d.values()),reverse=True)
    print(fr)
    maxfreq=[]
    if len(fr)>=k:
        for values in d.items():
            if values[1]==fr[k-1]:
                maxfreq.append(values[0])
        return min(maxfreq)
    else:
        print("-1")
kthhighestfrequency([9,8,7,6,5,2,3,4,9,6,7,7,7,6,7,6],4)
```

```
{9: 2, 8: 1, 7: 5, 6: 4, 5: 1, 2: 1, 3: 1, 4: 1}
[5, 4, 2, 1]
```

Out[84]: 2

In [89]:
```
#Function to find kth highest frequency
def kthlowestfrequency(li,k):
    d={}

    for i in li:
        if i in d:
            d[i]+=1
        else:
            d[i]=1
    print(d)
    fr=sorted(set(d.values()))
    print(fr)
    maxfreq=[]
    if len(fr)>=k:
        for values in d.items():
            if values[1]==fr[k-1]:
                maxfreq.append(values[0])
        return max(maxfreq)
    else:
        print("-1")
kthlowestfrequency([9,8,7,6,5,2,3,4,9,6,7,7,7,6,7,6],2)
```

```
{9: 2, 8: 1, 7: 5, 6: 4, 5: 1, 2: 1, 3: 1, 4: 1}
[1, 2, 4, 5]
```

Out[89]: 9

In [2]:
```
def nthhighestfrequency(N,k):
    d={}

    for i in N:
        if i in d:
            d[i]+=1
        else:
            d[i]=1
    fr=sorted(set(d.values()),reverse=True)

    if len(fr)>=k:
        highestvalue=fr[k-1]
        l=[]
        for k,values in d.items():
            if values==highestvalue:
                l.append((k,values))
                t=min(l)
        return(t[0])
    return "-1"




t=int(input())
for i in range(t):
    N=input()
    k=int(input())
    print(nthhighestfrequency(N,k))
```

```
uarcdcgzzqxhlqcjomvsnuykoyxwplzklqoruustmpczfeiusdoizmunktmcelopbcgxyysmnulva
vpvydfzqzmcsygwjwnmawjywbmmxzhyuytubattzgytgersdeedcqeztqlrqurksmhtmapnipgptx
jydncgfifbyssqmjdevkzjkqwtfckbbtzeidkqlprmjjcvuhbrrdaetyzzalcbebfohqeshvergjo
aqqtitvootnpvyrwevesewzwfudybmndcfzmauaoopgjpzitumoykpxpjaommdsqirdildybvelke
vgajwbtlykwaaloddenwhvjnuliyyuetafewgxjgjggkrupwadukadxuqhvqbblegpcmomuysaklw
bjxedhfigbbnyrqafugwxvllplfsxsoybnfgumoanppmjgoqcumbrzmjmrbljrkmfrszdhcsyrejz
uzcrofipsrclunxmzlrqesvnuonouxnpyrgozoetiiecxdqzphpvalkwbxkvuakvtqjshplrzsvxx
mwovnjxatubrgxngjkacwujlgcnyxkxlimhvveyrazihyxnikpkgmvtszgswspiabryzxwqyxafwz

ugjmspypjqorkmkbwkfnkelgulgwqevkmfweuuvfmlxyxjawvfjgjwofhudzyykkfiqcfnhrygqwp
ssnxdtichplesleqvpwfhykvhetqwrholulrpvtxkedcphumyssgsedciyseqbsdwfulankmsnqjx
nwvfqdawgcffwjxxeavlvhoktaejtoggmbnefnanphuntrlxugkrpyblbiuuyaakdpqkdsyuasitm
tqibcztbceckyyiaaudpmosfonfixyusqetsdovisxusxfuxzapoqjteyymvyjnonjitxebsdxmbc
jaejpszzldzlrvjaizothhtnknrhzumkwstokupxxokrjvruufndogratkkvgwfcobsavhzvwjmhe
fbanrdbzweviosomxtcalcytdtrmhysmasztxdswhnevhvhfolhbnfwqanehmywoqvjpybnhrueyp
lffypilufdvshegfawxyfpwjcgcwkanyiuwxditinqcxvjexhcvptuyxaawkcjimefjhpfrcvtzse
eqminbdhbajbwufiesmldvaimfghgymmqywebzncczfytkizewlirnsfuypdzbprboxcnlgrklqfx
ygcvrmohgwdflggoyxpmvtbiztumlzllfpizbxiivlpiuxwsulgrejzfettpuedaulbxkjhhwwpqv
lkqwshccjjgccyxhdzdoaabliijgyccjmuifdkjmurryrofupkjrlmctunbupdeczojdyurulivdy
```

In [ ]: