Kth Val

? Ask Doubt

Time-Limit: 4 sec Score: 100.00/100 Difficulty :

Memory: 256 MB Accepted Submissions: 100 Relevant For: AZ-202 AZ-301 AZ-201

Description

You have been given an array *A* of *N* integers and *M* ranges. *ith* range is defined by the two integers l_i and r_i, $l_i \leq r_i$.

Initially, array *S* is empty. For range i, add elements $A[l_i], A[l_{i+1}] \ldots A[r_i]$ in the array *S*. After adding all the elements in each of the range, sort the elements of *S* in ascending order.

You need to answer *Q* queries. Each query consists of a number $K > 0$. You have to find the *Kth* smallest element in *S*, i.e., the element at *Kth* position in sorted *S*.

It may be possible that the same element presents multiple times in S.

Input Format

The first line of the input contains a single integer *T* - the number of test cases($1 \leq T \leq 10$). Then *T* test cases follow.

The first line of each test case contains three integers *N*, *M*, and *Q, (*$1 \leq N, M, Q \leq 10^5$*).*

The second line contains *N* space-separated integers $A_1, A_2, \ldots, A_N$, the elements of the array A, ($1 \leq A_i \leq 10^9$).

Next *M* lines contain two space-separated integers l_i and r_i - ith range, ($1 \leq l_i \leq r_i \leq N$).

The last line of a test case contains *Q* space-separated integers $K_1, K_2, \ldots, K_Q$, where K_i denotes the ith query. ($1 \leq K_i \leq 1\ 0^{18}$).

Output Format

For each test case, print *Q* space-separated integers, where *ith* number denotes the answer of *ith* query. If the *Kth* value doesn't exist for a particular query, print *-1*.

Sample Input 1

Copy

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

C++14[GCC]

Submit

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1
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