Tulasi's Panipuri Plate

Tulasi loves Panipuri. She has a plate of Panipuri, which has a limited capacity. Initially, the plate is full. Before she adds up a piece of panipuri, she has to eat the panipuri in the first position in her plate. Each panipuri has a given taste unit. After every addition of a new panipuri, find out the panipuri, with maximum taste unit, present in her plate.

Input Format

First line contains - N - denoting the capacity of her plate Second line contains - An array of integers 'A', denoting the taste units of panipuris currently present in her plate. Third line contains - Q - the number of panipuris to be added Q lines follow. Each line contains an integer Qi, denoting the taste unit of new panipuri to be added in Tulasi's plate.

Constraints

1 <= N <= 10^6

1 <= Q <= 10^6

1 <= A[i] <= 10^16

Output Format

Print Q integers, without any separators, each integer representing the maximum taste unit of the panipuri present in her plate at that moment.

Sample Input 0

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6
6 8 7 5 3 4
4
1
2
9
6
```

Sample Output 0

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8799
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Explanation 0

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Initially, Tulasi's plate contains 6 panipuris of taste units {6,8,7,5,3,4}.
She eats the panipuri of taste unit 6, and adds a panipuri of taste unit 1 to her       plate.
So, the panipuri with maximum taste unit is 8.
Her plate now looks like {8,7,5,3,4,1}.

Then she eats the panipuri with taste unit 8, and adds one of taste unit 2.
So, the plate looks like {7,5,3,4,1,2}.
Panipuri with maximum taste unit in her plate currently is 7.

Deletion of 7, and addition of 9 in her plate makes her plate look like                    {5,3,4,1,2,9}.
Panipuri with maximum taste unit, now, is 9.
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Deletion of 5 and addition of 6 in her plate makes it look like {3,4,1,2,9,6}.
Maximum taste unit still remains 9.