

Queries with Fixed Length

Consider an n -integer sequence, $A = \{a_0, a_1, \dots, a_{n-1}\}$. We perform a query on A by using an integer, d , to calculate the result of the following expression:

$$\min_{0 \leq i \leq n-d} (\max_{i \leq j < i+d} a_j)$$

In other words, if we let $m_i = \max(a_i, a_{i+1}, a_{i+2}, \dots, a_{i+d-1})$, then you need to calculate $\min(m_0, m_1, \dots, m_{n-d})$.

Given *arr* and *q* queries, return a list of answers to each query.

Example

arr = [2, 3, 4, 5, 6]

queries = [2, 3]

The first query uses all of the subarrays of length 2: [2, 3], [3, 4], [4, 5], [5, 6]. The maxima of the subarrays are [3, 4, 5, 6]. The minimum of these is 3.

The second query uses all of the subarrays of length 3: [2, 3, 4], [3, 4, 5], [4, 5, 6]. The maxima of the subarrays are [4, 5, 6]. The minimum of these is 4.

Return [3, 4].

Function Description

Complete the *solve* function below.

solve has the following parameter(s):

- *int arr[n]*: an array of integers
- *int queries[q]*: the lengths of subarrays to query

Returns

- *int[q]*: the answers to each query

Input Format

The first line consists of two space-separated integers, n and q .

The second line consists of n space-separated integers, the elements of *arr*.

Each of the q subsequent lines contains a single integer denoting the value of d for that query.

Constraints

- $1 \leq n \leq 10^5$

- $0 \leq arr[i] < 10^6$

- $1 \leq q \leq 100$

- $1 \leq d \leq n$

Sample Input

```
5 5
1 2 3 4 5
1
2
3
4
5
```

Sample Output

```
1
2
3
4
5
```

Explanation

Each prefix has the least maximum value among the consecutive subsequences of the same size.