Crop Allocation

Time Limit	Memory Limit
1 second	128 MB

Statement

As a well-respected member of the Agricultural Computational Insights Organization (ACIO), you have been tasked to the following job: You are given a linear piece of land split into N cells, where each cell can contain at most one crop. Each cell also has a soil quality value a_i, which can be positive, negative or zero.

You have Q different plans. In the jth such plan, you have k_j different types of crops which you can plant onto the land, but for each type of crop, they must occupy in a contiguous set of cells to keep maintenance costs down. There are an infinite amount of crops of each type.

Your task is, for each plan, to find the maximum possible sum of the soil quality value where the crops are planted. You do not need to plant all k_j types of crops, or even any crops at all.

Input

- The first line of input contains the integers N and Q.
- The next line of input contains the space-separated integers $a_1, \ldots, a_N$.
- The next line of input contains the space-separated integers $k_1, \ldots, k_Q$.

Output

Output Q lines, the ith of which is the answer for the ith plan.

Sample Input 1

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

Sample Output 1

```
11
```

Sample Input 2

```
6 4
-1 3 4 -4 3 2
1 2 3 6
```

Sample Output 2

```
8
12
12
12
```

Constraints

- $1 \leq N, Q \leq 10^5$
- $-10^4 \leq a_i \leq 10^4$
- $1 \leq k_j \leq N$
- All k_j are unique and in ascending order.

Subtasks

Number	Points	N	Q	k_j
1	8	$N \leq 10^5$	$Q = 1$	$k_j = 1$
2	15	$N \leq 10^5$	$Q = 1$	$k_j \leq 2$
3	27	$N \leq 10^5$	$Q = 1$	$k_j \leq 50$
4	23	$N \leq 10^5$	$Q = 1$	$k_j \leq N$
5	27	$N \leq 10^5$	$Q \leq 10^5$	$k_j \leq N$