

Oh Fuck

Time limit: 1 second

Memory limit: 1GB

Problem Statement

You are given a list of integers a of length n . In addition to this you are given q queries, each containing an integer.

For each integer k in a query, determine the maximum quality subsequence of length k .

The quality of a subsequence $s = [s_1, s_2, \dots, s_k]$ is defined as the maximum prefix sum of the subsequence, i.e. the quality is defined as:

$$\max \left\{ \sum_{i=0}^j s_i : 0 \leq j \leq k \right\} = \max \{0, s_1, s_1 + s_2, \dots\}$$

Please note that this includes, the prefix of length 0 and therefore the quality of a subsequence will always at least be 0 for any subsequence.

Input Format

Your first line will contain two space-separated integers n and q .

Your next line will contain n space-separated integers representing the elements of a in order.

Your next line will contain q space-separated integers, representing the query numbers.

Output Format

For each query, output the maximum strength subsequence of the same length of that query.

Constraints

- $1 \leq q \leq n \leq 10^4$

Sample Cases

Input 1

```
5 5
-7 5 -7 -10 5
3 5 2 1 4
```

Output 1

```
5 0 10 5 5
```

Input 1

```
30 30
7 -3 -2 -1 -6 -3 -7 -1 -3 -1 6 -8 8 0 -7 10 -3 -10 9 4 4 -7 7 0 -8 6 -1 0 2 -4
19 7 6 29 3 23 10 9 11 15 14 16 26 24 18 30 21 25 20 2 1 5 12 13 22 17 27 28 4 8
```

Output 1

57 53 47 7 27 45 63 61 63 62 63 61 25 39 59 7 51 32 54 19 10 41 63 63 48 60 18 11 34 57