TC2017 Análisis y Diseño de Algoritmos
ProyB – BeagleBalls
Ing. Luis Humberto González G
Forma de Trabajo: *Individual*.

In BeagleTown there is a game where a group of BeagleBalls throws a group of soldiers, First of all, a Beagle line up the soldiers, each one of them has his strength, on the other side they have a group of BeagleBalls that the Beagle throws to the soldiers, each BeagleBall has the power to shoot down soldier depending the power of the BeagleBall and the strength of the soldiers. Each soldier is shooting down in order of the lineup when all the soldiers are shooting down, the beagle raises all the soldiers again and continues with next BeagleBall.

For example if there are 5 soldiers with the strength of 3 2 5 1 2 and there are 4 BeagleBalls with the power of 5 1 10 3. The first BeagleBall shoot down the soldiers 1 and 2, the second BeagleBall reduce the strength of the third soldier in 1, the third BeagleBall shoot down the soldiers 3, 4, 5, then all the soldiers are raising up, and the fourth BeagleBall shoot down the first soldier.

We want to know the number of soldiers that remain standing after each BeagleBall. In the example above the output must be 3 3 5 4

Input

First comes **n** number of soldiers and **q** the number of BeagleBalls (***1 <= n, q <= 200000***), then comes a line with n integers (***0 < a[i] <= 10^9***) meaning the strength of each soldier, then comes a line of q integers (***0 < b[i] <= 10^9***) meaning the power of each BeagleBall.

Output

Print q lines, each one with the integer of the number of soldiers after throwing each BeagleBall.

Sample Input

```
5 5
1 2 1 2 1
3 10 1 1 1
```

Sample Output

```
3
```

5
4
4
3