Vaccination Camp

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Booking COVID vaccinations on the CoWin platform is like playing the fastest fingers first game. To improve the slot booking process, the government has allowed vaccination centres to tie-up with housing societies and set camps to ramp up the vaccination drive.

You are given a sorted array V where V[i] is the number of vaccines available at the i'th vaccination center. You also have another sorted array H where H[i] is the number of people eligible for covid vaccination in the i'th housing society.

Representatives from each housing society are trying to contact these vaccination centres for possible tie-ups. Every rep can contact only those centres which have enough vaccines to cover all eligible residents in their society. Help the reps to find out exactly how many vaccination centres they can contact for a possible tie-up.

Input

The first line contains an integer n1 ($0 \leq n1 \leq 10^5$) — the length of the array V.

The second line contains n1 integers v1,v2,...,vn1 ($0 \leq V[i] \leq 10^9$) — the elements of V.

The third line contains an integer n2 ($0 \leq n2 \leq 10^5$) — the length of the array H.

The fourth line contains n2 integers h1,h2,...,hn2 ($0 \leq H[i] \leq 10^9$) — the elements of H.

Output

Output n2 space separated integers where the i'th integer denotes the number of vaccination centres the i'th society can contact

Example

standard input	standard output
6 4 5 8 9 10 12 7 6 8 9 11 12 14 15	4 4 3 1 1 0 0

Note

The first housing society can contact centres of capacity 8,9,10,12.

The second housing society can contact centres of capacity 8,9,10,12.

The third housing society can contact centres of capacity 9,10,12.

The fourth housing society can contact centre of capacity 12... and so on.