Multiples Query

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

Mtaylor is arithmetic and prefixes lover , Today it's his birthday , so his friends decided to give him an array a of n integers as a gift . He wants to play a game , every one of his friends will give him an integer r $(1 \leq r \leq n)$ and he needs to find the maximum length of subset S in the prefix $[1, r]$ of the array containing distinct integers such there is an integer x in S that divides all the numbers in the set S .

While Mtaylor was eating the cake , you decided to play the game instead of him , you are given q queries , the i'th one contains an integer r_i , and your task is to give the answer of the problem in the range $[1, r_i]$ in seperate lines .

Input

The first line contains 2 integers n and q $(1 \leq q \leq n \leq 100000)$.

The second line contains n integers a_i the elemnts of the array $(1 \leq a_i \leq 10000$).

The last line contains q integers r_i $(1 \leq r_i \leq n)$, where r_i represents the ranges of the i'th query .

Output

Print q lines , the answers to the queries .

Example

standard input	standard output
5 5 2 4 3 1 2 5 2 4 1 3	4 2 4 1 2