

LCM Queries

Input file: **standard input**
Output file: **standard output**
Time limit: **6 seconds**
Memory limit: **512 megabytes**

You are given an array of n positive integers and q queries.

On each query, you are given a positive integer x . You need to output $\max_{i=1}^n [\text{lcm}(x, a_i)]$.

In other words, what is the maximum least common multiple of x with any number from a ?

Input

The first line contains two integers n, q ($1 \leq n, q \leq 5 \cdot 10^5$) — the size of the array a , and the number of queries.

The second line contains n space-separated integers a_1, \dots, a_n ($1 \leq a_i \leq 10^6$) — the array.

The third line contains q space-separated integers x_1, \dots, x_q ($1 \leq x_i \leq 10^6$) — the queries.

Output

Output a single line containing q space-separated integers — the answers to the queries.

We strongly recommend using fast I/O for this problem.

Example

standard input	standard output
5 5	40 30 70 40 60
6 4 1 10 8	
5 6 7 8 20	

Note

In the example test case, the optimal pairs are $\text{lcm}(5, 8) = 40$, $\text{lcm}(6, 10) = 30$, $\text{lcm}(7, 10) = 70$, $\text{lcm}(8, 10) = 40$, $\text{lcm}(5, 20) = 20$.