

Sherlock and Queries



Watson gives to Sherlock an array: A_1, A_2, \dots, A_N . He also gives to Sherlock two other arrays: B_1, B_2, \dots, B_M and C_1, C_2, \dots, C_M .

Then Watson asks Sherlock to perform the following program:

```
for i = 1 to M do
  for j = 1 to N do
    if j % B[i] == 0 then
      A[j] = A[j] * C[i]
    endif
  end do
end do
```

Can you help Sherlock and tell him the resulting array A ? You should print all the array elements modulo $(10^9 + 7)$.

Input Format

The first line contains two integer numbers N and M . The next line contains N integers, the elements of array A . The next two lines contains M integers each, the elements of array B and C .

Output Format

Print N integers, the elements of array A after performing the program modulo $(10^9 + 7)$.

Constraints

- $1 \leq N, M \leq 10^5$
- $1 \leq B[i] \leq N$
- $1 \leq A[i], C[i] \leq 10^5$

Sample Input

```
4 3
1 2 3 4
1 2 3
13 29 71
```

Sample Output

```
13 754 2769 1508
```