

# 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
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
```