CODEFORCES
Sponsored by TON

| Hammad_Khalid | Logout
You have +164! Wow!

HOME TOP CATALOG CONTESTS GYM PROBLEMSET GROUPS RATING EDU API CALENDAR HELP

PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS STANDINGS CUSTOM INVOCATION

J. Coprime Subsequences Redux

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

You have an array a with n integers, all between 1 and m. For all x between 1 and m, find the number of subsequences where the GCD of all elements in the subsequence is equal to x. Output your answer(s) modulo $10^9 + 7$.

Input

The first line contains two integers n ($1 \le n \le 10^5$) and m ($1 \le m \le 10^5$).

The second line contains n integers, the array a ($1 \le a_i \le m$).

Output

Output m integers, where the i-th integer is the answer for $x = i$, mod $10^9 + 7$.

Examples

input
```
3 3
1 2 3
```
output
```
5 1 1
```

input
```
4 10
1 1 1 1
```
output
```
15 0 0 0 0 0 0 0 0 0
```

input
```
7 30
1 2 3 6 2 30 15
```
output
```
100 12 10 0 0 2 0 0 0 0 0 0 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 1
```

Topic Stream Mashup: Number Theory
Finished
Practice

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Submit?

Language: GNU G++17 7.3.0
Choose file: Choose file No file chosen
Submit

Codeforces (c) Copyright 2010-2023 Mike Mirzayanov
The only programming contests Web 2.0 platform
Server time: May/10/2023 19:56:53 UTC+5.5 (h2).
Desktop version, switch to mobile version.
Privacy Policy

Supported by

ITMO UNIVERSITY