

Problem D

Furong's Love Quest II

Time limit: 3 seconds

Memory limit: 1024 megabytes

Problem Description

Wubaiyuan's online autograph session has unexpectedly been held again in such a short time!? After last time's password-cracking incident, Furong's mother – though angry – also couldn't help but recognize her son's incredible mathematical talent. This time, once again, she changed the password to his computer, deliberately leaving behind an even more complex encryption rule to test him.

Although doing so might only fuel further misunderstanding about this so-called "talent," Furong, eager to see his beloved idol, has no choice but to once again seek your help, the real mathematical genius, to unlock his computer. The encryption rule this time has two steps:

Step 1. Apply $\% \text{key}$ to each digit.

Step 2. For each number after $\% \text{key}$: if it is even, then $+ \text{delta}$; otherwise, $- \text{delta}$

His mother's true intention was to sharpen Furong's reverse-engineering ability. That's why, along with the encrypted password, she also provided three clues (though some of them may be useless for the decryption process):

1. A positive integer key used for the $\%$ (modulo) operation.
2. An array lossArray that records how much each number was reduced by after the modulo with key .
3. A positive integer delta that is added (or subtracted) right after the modulo operation.

Here's an example with $\text{key} = 4$ and $\text{delta} = 1$:

| | | | | | | |
|--------------------|----|---|---|---|---|---|
| Before Encryption | 10 | 3 | 5 | 2 | 8 | 7 |
| $\% \text{key}$ | 2 | 3 | 1 | 2 | 0 | 3 |
| lossArray | 8 | 0 | 4 | 0 | 8 | 4 |
| Encryption Result | 3 | 2 | 0 | 3 | 1 | 2 |

Based on the above encryption rules and the clues provided by Furong's Mom, reverse-engineer and determine the actual current password of the computer.

Input Format

This problem contains only one test case. The input consists of four lines, formatted as follows:

- Line 1: A positive integer N , representing the length of the password.
- Line 2: Two positive integers, key and delta , separated by a space.

- Line 3: N integers separated by spaces, representing the *lossArray* that records the loss of each digit after being modulo-divided by key.
- Line 4: N integers separated by spaces, representing the result of each digit after encryption.

Output Format

Output a single line containing N integers separated by spaces, representing the correct password.

Technical Specification

- $6 \leq N \leq 100$
- $1 \leq key \leq 50$
- $1 \leq delta \leq 50$
- $-500 \leq \text{the length of each encrypted password} \leq 500$

Sample Input 1

```
6
4 1
8 0 4 0 8 4
3 2 0 3 1 2
```

Sample Output 1

```
10 3 5 2 8 7
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