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1020. Big Integer

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Description

Time Limit: 1sec Memory Limit: 32MB

Long long ago, there was a super computer that could deal with VeryLongIntegers (no VeryLongInteger will be negative). Do you know how this computer stores the VeryLongIntegers? This computer has a set of n positive integers: b_1, b_2, \dots, b_n , which is called a basis for the computer.

The basis satisfies two properties:

- 1) $1 < b_i \leq 1000$ ($1 \leq i \leq n$),
- 2) $\gcd(b_i, b_j) = 1$ ($1 \leq i, j \leq n, i \neq j$).

Let $M = b_1 * b_2 * \dots * b_n$

Given an integer x , which is nonnegative and less than M , the ordered n -tuples $(x \bmod b_1, x \bmod b_2, \dots, x \bmod b_n)$, which is called the representation of x , will be put into the computer.

Input

The input consists of T test cases. The number of test cases (T) is given in the first line of the input.

Each test case contains three lines.

The first line contains an integer n ($n \leq 100$).

The second line contains n integers: b_1, b_2, \dots, b_n , which is the basis of the computer.

The third line contains a single VeryLongInteger x .

Each VeryLongInteger will be 400 or fewer characters in length, and will only contain digits (no VeryLongInteger will be negative).

Output

For each test case, print exactly one line -- the representation of x .

The output format is: (r_1, r_2, \dots, r_n)

Sample Input

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```
2
3
2 3 5
10
4
2 3 5 7
13
```

Sample Output

[Copy](#)

```
(0, 1, 0)
(1, 1, 3, 6)
```

Problem Source: ZSUACM Team Member

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