

Problem O

Least Positive Solution

Time limit: 1 second

Memory limit: 256 megabytes

Problem Description

Given a sequence $(d_1, r_1), \dots, (d_n, r_n)$ of n pairs of integers such that $d_i > r_i \geq 0$. Write a program to compute the least positive integer x such that $x \equiv r_i \pmod{d_i}$ for every $i \in \{1, \dots, n\}$. If there does not exist such integer, output **no solution**.

Input Format

The first line of the input contains an integer t ($t \leq 25$) indicating the number of test cases. Each test case consists of 3 lines. The first one is an integer n indicating the length of the sequence. The second one contains n integers d_1, \dots, d_n separated by blanks. The third line also contains n integers r_1, \dots, r_n . You may assume that $n \leq 100$, the least common multiple of d_1, d_2, \dots, d_n is less than 2^{63} and $0 \leq r_i < d_i \leq 10000$ for $i \in \{1, \dots, n\}$.

Output Format

For each test case, output the least positive integer x such that $x \equiv r_i \pmod{d_i}$ for every $i \in \{1, \dots, n\}$. If there does not exist such integer, output **no solution**.

Sample Input

```
2
3
2 3 4
1 2 3
2
10 8
5 4
```

Sample Output

```
11
no solution
```