

Week 1: Assignment 1 - Question 3

Problem Statement

Given the coefficients of a pair of linear equations,

$$a_1x + b_1y = c_1$$

$$a_2x + b_2y = c_2$$

Find the solutions to x and y

Input

Input consists two lines.

The first line contains coefficients of first equation, a_1 b_1 c_1 in that order

The second line contains coefficients of second equation, a_2 b_2 c_2 in that order

Output

The solutions to x and y .

Note : You can assume that both x and y will always be integers.

You can also assume that the solution is unique.

Sample input

```
2 3 7
4 -2 6
```

Sample Output

```
2 1
```

Explanation

The set of equations are :

$$2x + 3y = 7$$

$$4x - 2y = 6$$

The solution is $x = 2; y = 1$.

Hint

Recall the gaussian elimination method learned in high school.

For example consider the set of equations,

$$2x + 3y = 7$$

$$4x - 2y = 6$$

To solve for x , multiply the first equation by $b_2 = -2$ and the second equation by $b_1 = 3$, we get

$$-4x - 6y = -14$$

$$12x - 6y = 18$$

Subtracting equation 1 and 2, we get $-16x = -32$ and therefore $x = \frac{-32}{-16} = 2$.

One can similarly solve for y .

Formulate the steps involved during gaussian elimination in terms of a_1 b_1 c_1 and a_2 b_2 c_2 and convert this into a program.