PROBLEMS   SUBMIT   STATUS   STANDINGS   CUSTOM TEST

B. Little Elephant and Magic Square

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

Little Elephant loves magic squares very much.

A *magic square* is a 3×3 table, each cell contains some positive integer. At that the sums of integers in all rows, columns and diagonals of the table are equal. The figure below shows the magic square, the sum of integers in all its rows, columns and diagonals equals 15.

The Little Elephant remembered one magic square. He started writing this square on a piece of paper, but as he wrote, he forgot all three elements of the main diagonal of the magic square. Fortunately, the Little Elephant clearly remembered that all elements of the magic square did not exceed 10^5.

Help the Little Elephant, restore the original magic square, given the Elephant's notes.

Input

The first three lines of the input contain the Little Elephant's notes. The first line contains elements of the first row of the magic square. The second line contains the elements of the second row, the third line is for the third row. The main diagonal elements that have been forgotten by the Elephant are represented by zeroes.

It is guaranteed that the notes contain exactly three zeroes and they are all located on the main diagonal. It is guaranteed that all positive numbers in the table do not exceed 10^5.

Output

Print three lines, in each line print three integers — the Little Elephant's magic square. If there are multiple magic squares, you are allowed to print any of them. Note that all numbers you print must be positive and not exceed 10^5.

It is guaranteed that there exists at least one magic square that meets the conditions.

Examples

input
```
0 1 1
1 0 1
1 1 0
```
output
```
1 1 1
1 1 1
1 1 1
```

input
```
0 3 6
5 0 5
4 7 0
```
output
```
6 3 6
5 5 5
4 7 4
```

Codeforces Round #157 (Div. 2)
Finished

→ 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 ACM-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]

→ Problem tags

[brute force] [implementation]

No tag edit access

→ Contest materials

- Announcement   ✕
- Tutorial   ✕