Problem J3: Are we there yet?

Problem Description
You decide to go for a very long drive on a very straight road. Along this road are five cities. As you travel, you record the distance between each pair of consecutive cities.

You would like to calculate a distance table that indicates the distance between any two of the cities you have encountered.

Input Specification
The first line contains 4 positive integers less than 1000, each representing the distances between consecutive pairs of consecutive cities: specifically, the ith integer represents the distance between city i and city $i + 1$.

Output Specification
The output should be 5 lines, with the ith line ($1 \leq i \leq 5$) containing the distance from city i to cities 1, 2, ... 5 in order, separated by one space.

Sample Input
```
3 10 12 5
```

Output for Sample Input
```
0 3 13 25 30
3 0 10 22 27
13 10 0 12 17
25 22 12 0 5
30 27 17 5 0
```

Explanation of Output for Sample Input
The first line of output contains:

- 0, since the distance from city 1 to city 1 is 0;
- 3, since the distance between city 1 and city 2 is 3;
- 13, since the distance between city 1 and city 3 is $3 + 10 = 13$;
- 25, since the distance between city 1 and city 4 is $3 + 10 + 12 = 25$;
- 30, since the distance between city 1 and city 5 is $3 + 10 + 12 + 5 = 30$.

Problem J4/S2: Sunflowers

Problem Description

Barbara plants N different sunflowers, each with a unique height, ordered from smallest to largest, and records their heights for N consecutive days. Each day, all of her flowers grow taller than they were the day before.

She records each of these measurements in a table, with one row for each plant, with the first row recording the shortest sunflower's growth and the last row recording the tallest sunflower's growth. The leftmost column is the first measurement for each sunflower, and the rightmost column is the last measurement for each sunflower.

If a sunflower was smaller than another when initially planted, it remains smaller for every measurement.

Unfortunately, her children may have altered her measurements by rotating her table by a multiple of 90 degrees.

Your job is to help Barbara determine her original data.

Input Specification

The first line of input contains the number N ($2 \leq N \leq 100$). The next N lines each contain N positive integers, each of which is at most 10^9. It is guaranteed that the input grid represents a rotated version of Barbara's grid.

Output Specification

Output Barbara's original data, consisting of N lines, each of which contain N positive integers.

Sample Input 1

```
2
1 3
2 9
```

Output for Sample Input 1

```
1 3
2 9
```

Explanation of Output for Sample Input 1

The data has been rotated a multiple of 360 degrees, meaning that the input arrangement is the original arrangement.

Sample Input 2

```
3
4 3 1
6 5 2
9 7 3
```

Output for Sample Input 2

```
1 2 3
3 5 7
4 6 9
```

Explanation of Output for Sample Input 2

The original data was rotated 90 degrees to the right/clockwise.

Sample Input 3

```
3
3 7 9
2 5 6
1 3 4
```

Output for Sample Input 3

```
1 2 3
3 5 7
4 6 9
```

Explanation of Output for Sample Input 3

The original data was rotated 90 degrees to the left/counter-clockwise.