CCC '18 J3 - Are we there yet?

Time limit: 3.0s **Memory limit:** 256M

Canadian Computing Competition: 2018 Stage 1, Junior #3

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 $1\,000$, 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 $1, 2, 3, 4, 5$ in order, separated by one space.

Sample Input

```
3 10 12 5
```

Sample Output

```
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 for Sample Output

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 $3 + 10 + 12 + 5 = 30$.