F. Inherited Land

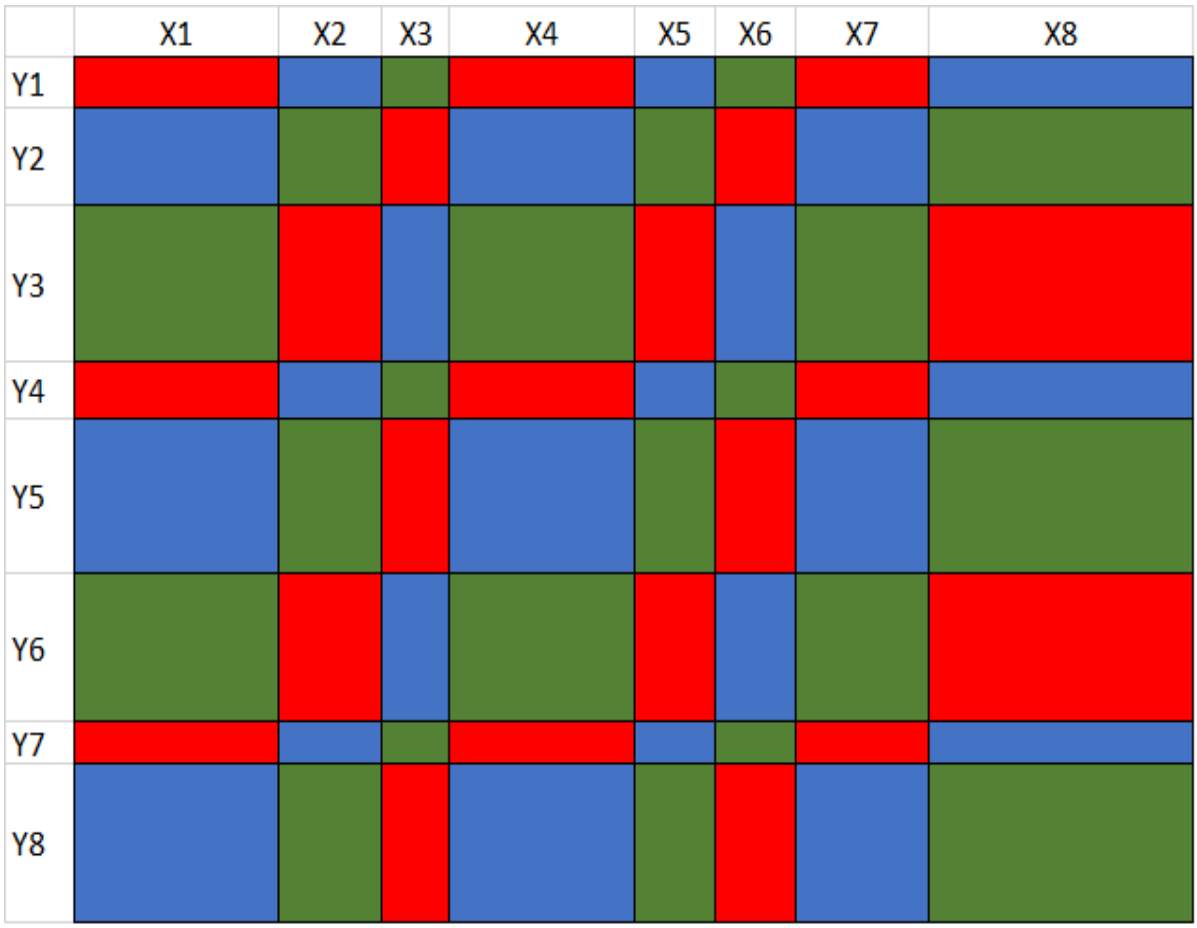
Program:	`land.(cpp|java)`
Input:	`land.in`
Balloon Color:	`Dark Blue`

Description

King Color died and left 3 princes behind: Red (22 years old), Green (21), and Blue (20). They inherited a huge piece of land with rectangular shape; the three children had a dispute on how to divide the land between them, until their father's advisor suggested to use the following method:

He partitioned the land into *n* vertical stripes of random lengths: X1, X2, … Xn, meters and *n* horizontal stripes of random lengths Y1, Y2, …, Yn meters.

These stripes split the land into *n x n* rectangles. The intersection of vertical stripe *i* and horizontal stripe *j* has code number *(i + j) mod 3*, and hence is given to the prince with the same first digit in his age. For example area X1 Y1 has the code *(1+1)%3 = 2*, hence it is given to prince Red (22), area Y6 X4 has the code 1 hence it is given to prince Green (21). See the figure for *n = 8*. Your task is to calculate the area of land given to each prince.



Input

The input consists of several problem instances, each starts with the integer *n* on the first line, followed by two lines each has *n* integers for the values of X1, … , Xn, separated with single spaces, followed by the values of Y1, … , Yn on the next line separated with single spaces. Then next problem instance follows starting with a new *n*. Problem instances terminate when *n = 0*. Problem boundaries are:

$3 \leq n \leq 250000$
$1 \leq Y_i, X_i \leq 10$

Output

For each problem instance print out the area of land for the three princes in order: Red Green Blue separated by a single space, one line for each problem instance.

Sample Input / Output

land.in

```
3
1 1 1
1 1 1
3
1 2 3
2 3 4
7
6 2 4 5 1 1 4
2 5 1 4 2 3 4
0
```

OUTPUT

```
3 3 3
19 16 19
197 131 155
```