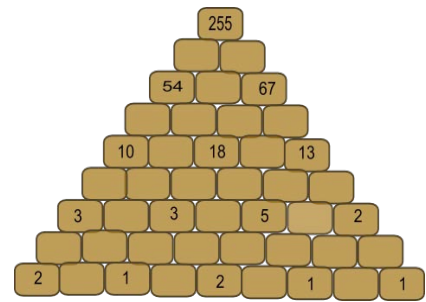


M - Add Bricks in the Wall

Suppose you have a wall with the shape of a triangle, like the one shown here. The wall has 9 rows and row i has exactly i bricks, considering that top row is the first one and bottom row is the ninth. Some bricks are labeled with a number and others are blank. Labeled bricks appear only on odd rows and they occupy odd positions within the row. The problem you must solve is finding a suitable integer value for each blank brick, following one rule: the brick's value is obtained by adding the values of the two bricks below it. Obviously, this rule does not apply to the ninth row.



Input

The first line of the input contains an integer N , indicating the number of test cases. This line is followed by the lines corresponding to the test cases. Each test case is described in five lines. These five lines correspond to odd rows of the wall, from top to bottom, as described above. Line i contains the numbers corresponding to odd bricks on row i of the wall (that is, non blank bricks), enumerated from left to right and separated with a single space. A solution is guaranteed to exist. All input values are positive integers.

Output

For each test case, the output should consist of nine lines containing the numbers of all bricks in the wall. Therefore, line i should contain the numbers corresponding to the i bricks on row i of the wall, enumerated from left to right and separated by single spaces.

Sample Input	Sample Output
2	255
255	121 134
54 67	54 67 67
10 18 13	23 31 36 31
3 3 5 2	10 13 18 18 13
2 1 2 1 1	5 5 8 10 8 5
256	3 2 3 5 5 3 2
64 64	2 1 1 2 3 2 1 1
16 16 16	2 0 1 0 2 1 1 0 1
4 4 4 4	256
1 1 1 1 1	128 128
	64 64 64
	32 32 32 32
	16 16 16 16 16
	8 8 8 8 8 8
	4 4 4 4 4 4 4
	2 2 2 2 2 2 2 2
	1 1 1 1 1 1 1 1 1