

July 13: OBU Housing Plans

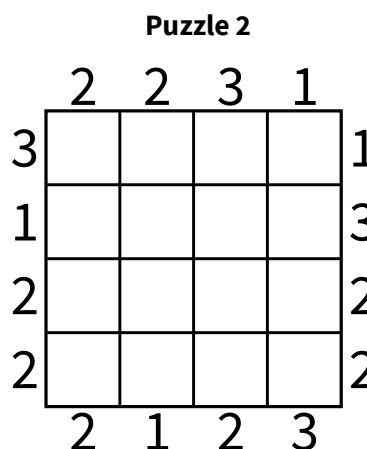
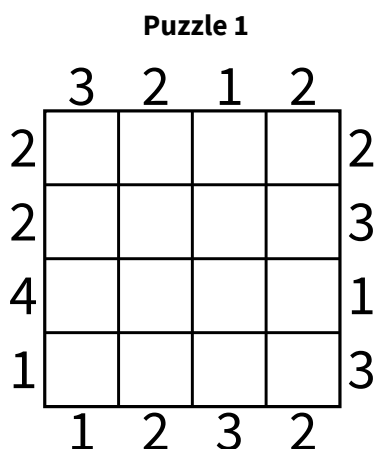
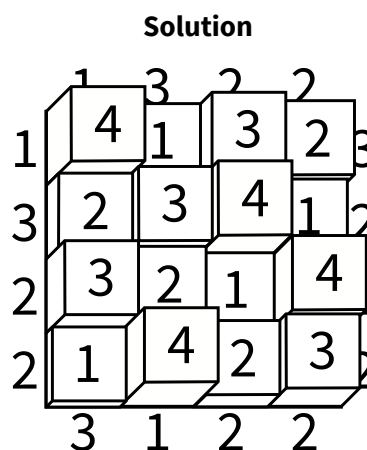
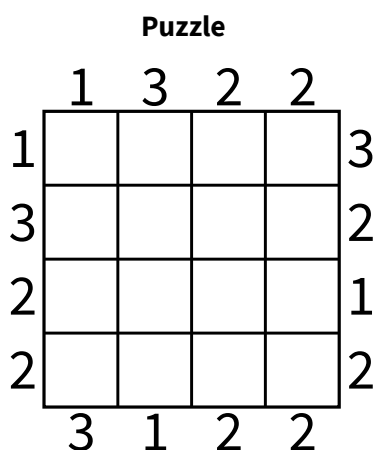
OBU Housing has been busy over the summer building a new village of apartment buildings. They have leaked puzzlingly little information about their design. Your job is to deduce the number of floors of each of the buildings.

The Rules

The new village is a n by n grid of buildings.

- Each row contains exactly one building of height 1, 2, ..., n and each column has this same property. (This is similar to Sudoku and is called a *Latin Square*.)
- The clues around the grid describe the number of buildings that can be seen if you look into the grid from that direction. Shorter towers are hidden behind taller ones.

Here is puzzle and its solution. Notice that Column 4 looking downward has a clue of 2, because only the building with two and four floors can be seen from that direction; the buildings with one floor and three floors are hidden behind taller buildings. Row 2 looking to the right has a clue of 3 since the buildings with two, three, and four floors can be seen, but they are hiding the one-story building.



Puzzle 3

	1	4	2	2	2	
1						2
2						2
3						1
3						2
2						3
	5	1	4	2	2	

Puzzle 4 (2 points)

	2	3	1	3	3	2	
3							2
1		4		5			3
2	2						3
2							2
3			1				1
3							2
	3	3	2	1	3	2	