WPF SUDOKU/PUZZLE GRAND PRIX 2025

ROUND 1

WPF PUZZLE GP 2025 COMPETITION BOOKLET

Host Country: India

Madhav Sankaranarayanan, Prasanna Seshadri, Chandrachud Nanduri, Ashish Kumar

Special Notes: An earlier draft of the booklets had incorrect author credits for some of the puzzles. This has now been fixed. The puzzle content is unmodified.

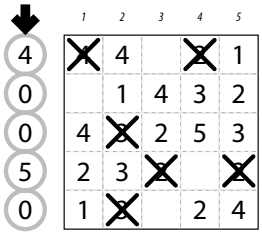
1-2. Hitori [Madhav Sankaranarayanan] (15, 20 points)

Remove some cells from the grid so that all remaining cells are connected orthogonally and no two removed cells are adjacent orthogonally. Additionally, for each row and each column, the numbers in the unremoved cells must be all different.

The numbers on top of the diagram are for Answer purposes only.

Answer: For each row from top to bottom, enter the number (on top) of the *second* column from the left that has a removed cell. Use only the last digit for two-digit numbers; e.g., use '0' if the second removed cell appears in column 10. If fewer than two of the cells in the row are removed, enter '0'.

Example Answer: 40050



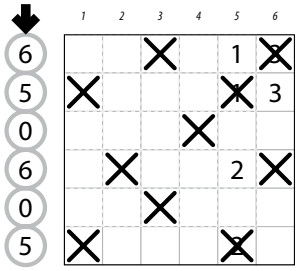
1

1	2	3	4	5	6	7	8
6	2	1	3	8	6	4	1
4	4	3	2	3	1	6	8
5	3	5	4	1	8	5	2
8	4	7	5	6	1	2	3
7	8	2	3	4	7	1	2
1	7	8	6	5	3	8	4
6	1	4	2	2	1	3	6
2	4	2	1	3	5	1	7

2

1	2	3	4	5	6	7	8	9
8	8	7	3	5	4	3	7	1
3	4	9	1	3	6	7	8	5
5	2	4	7	1	7	3	6	2
1	6	9	2	4	8	5	9	3
4	3	2	6	5	8	8	1	6
5	9	7	3	9	2	3	2	1
8	1	5	8	2	3	6	3	4
6	4	1	7	3	9	2	4	7
7	5	3	9	8	3	4	1	2

3. Hitori (Aqre) [Prasanna Seshadri] (60 points)



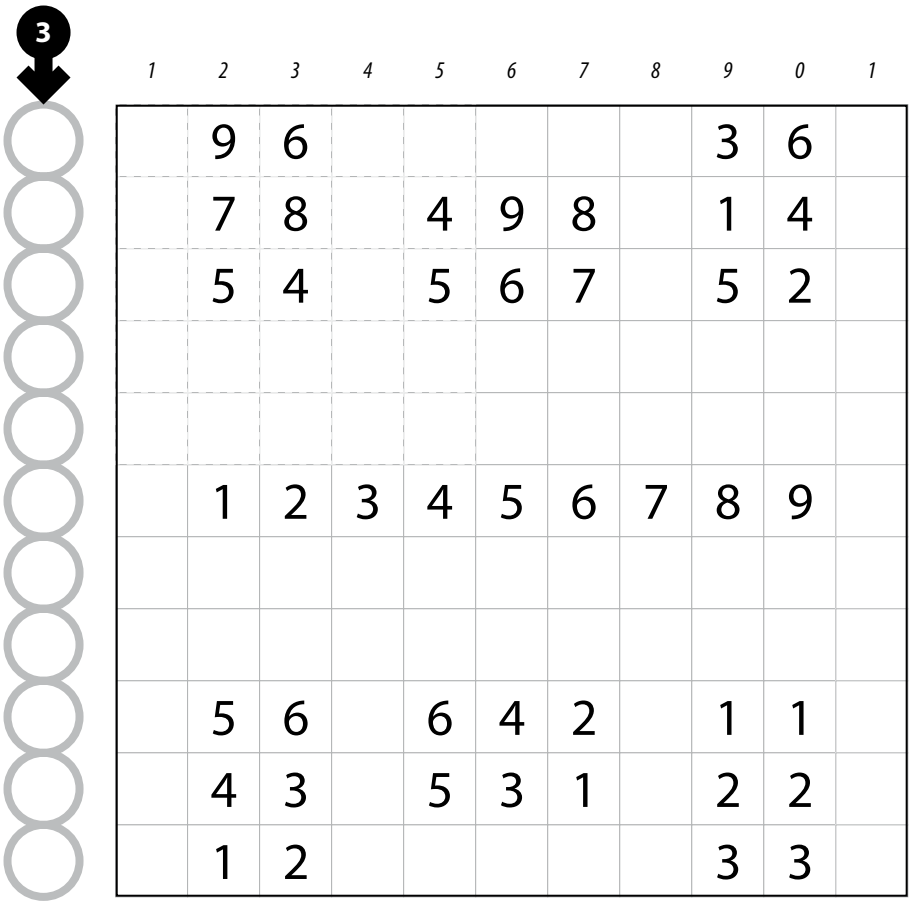
Remove some cells from the grid so that all remaining cells are connected orthogonally and no two removed cells are adjacent orthogonally. Additionally, for each row and each column, the numbers in the unremoved cells must be all different.

Every group of four consecutive cells in a row or column must have at least one removed cell.

The numbers on top of the diagram are for Answer purposes only.

Answer: For each row from top to bottom, enter the number (on top) of the *second* column from the left that has a removed cell. Use only the last digit for two-digit numbers; e.g., use '0' if the second removed cell appears in column 10. If fewer than two of the cells in the row are removed, enter '0'.

Example Answer: 650605



4-5. Pentominous [Chandrachud Nanduri] (30, 20 points)

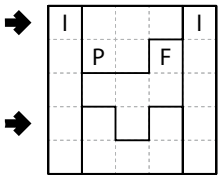
Divide the grid into pentominoes (contiguous regions of five cells) such that every cell is part of exactly one pentomino. Pentominoes of the same shape (rotations and reflections of a pentomino count as the same shape) cannot touch each other along an edge (but they may touch diagonally). Some letters are given in the grid. Each letter must be part of a pentomino with that letter's shape. It is permissible for a pentomino to contain more than one letter or no letters at all. (It is possible for some pentomino shapes to never appear in the grid, or more than once.)

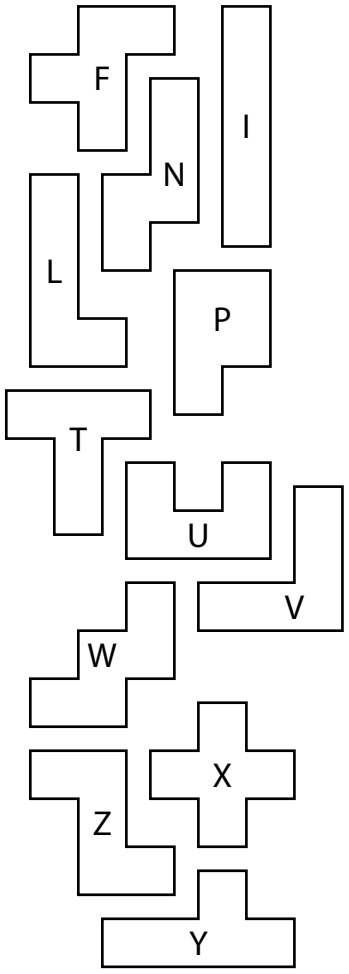
The letter-to-shape correspondence for pentominoes has been supplied for you.

In the competition puzzle, there may be black areas that are not part of the grid.

Answer: For each designated row, enter the letter for the pentomino that each cell belongs to, from left to right.

Example Answer:
`IPPPI,IUFUI`





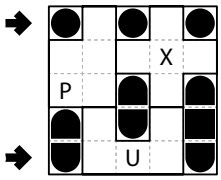
4

									U
				W	W				
			L			T			
		V					Z		
	I							P	
	T							V	
		X					L		
			X			V			
				W	L				
Y									

5

							Z	U	
V									
P									
				P	P				
			L	P	F				
									F
									Y
	N	T							

6. Pentominous (Battleships) [Chandrachud Nanduri] (36 points)



Locate the indicated fleet of ships in the grid. Ships may be rotated before being placed in the grid. Each piece of a ship occupies a single cell. Ships do not touch each other, not even diagonally (that is, if two ship pieces are in cells that share an edge or a corner, they must be part of the same ship).

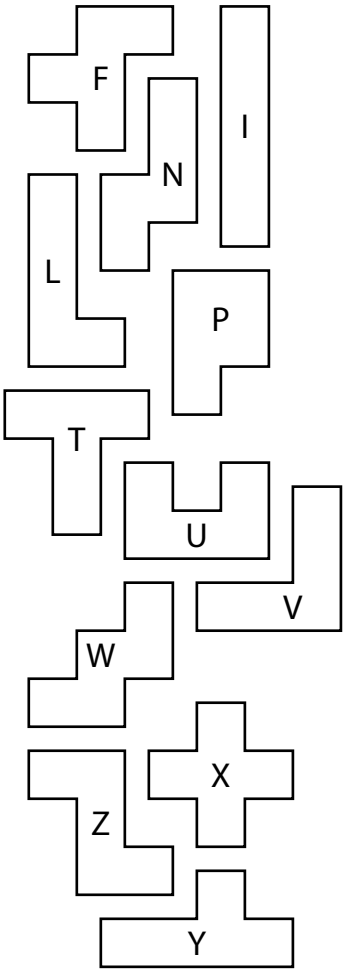
Some letters are given in the grid; cells with letters cannot be part of a ship.

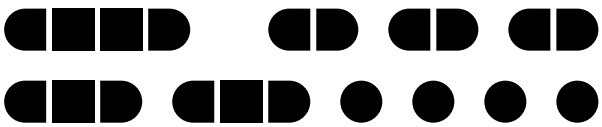
Then, divide the non-ship cells of the grid into pentominoes (contiguous regions of five cells) such that every such cell is part of exactly one pentomino. Pentominoes of the same shape (rotations and reflections of a pentomino count as the same shape) cannot touch each other along an edge (but they may touch diagonally). Each cell with a letter must be part of a pentomino with that letter's shape. It is permissible for a pentomino to contain more than one letter, or no letters at all. (It is possible for some pentomino shapes to never appear in the grid, or more than once.)

The letter-to-shape correspondence for pentominoes has been supplied for you.

Answer: For each designated row, enter the letter for each cell, from left to right. The letter for a cell is the letter for the corresponding pentomino, and is 'B' if the cell is not part of a pentomino.

Example Answer: BPBXB,BUUUB





6a

6b

Z									Y
			V			I			
			X			T		T	
X									
			T		U				
	L								
			P						
						Y			
		P			Y				

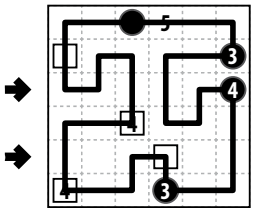
7-8. Balance Loop [Chandrachud Nanduri] (27, 66 points)

Draw a single loop that passes orthogonally through centers of cells. The loop cannot intersect itself or enter the same cell more than once.

The loop must go through all cells with a symbol or number. For each cell on the loop, consider an "arm" to be the loop segment between the center of that cell and the next or previous turn in the loop; each cell therefore has two arms. A white square in a cell indicates that its two arms are of equal length; A black circle in a cell indicates that its two arms are of unequal length. A number in a cell indicates the sum of the lengths of its two arms. (The length of an arm is considered to be the number of cell borders it goes through.)

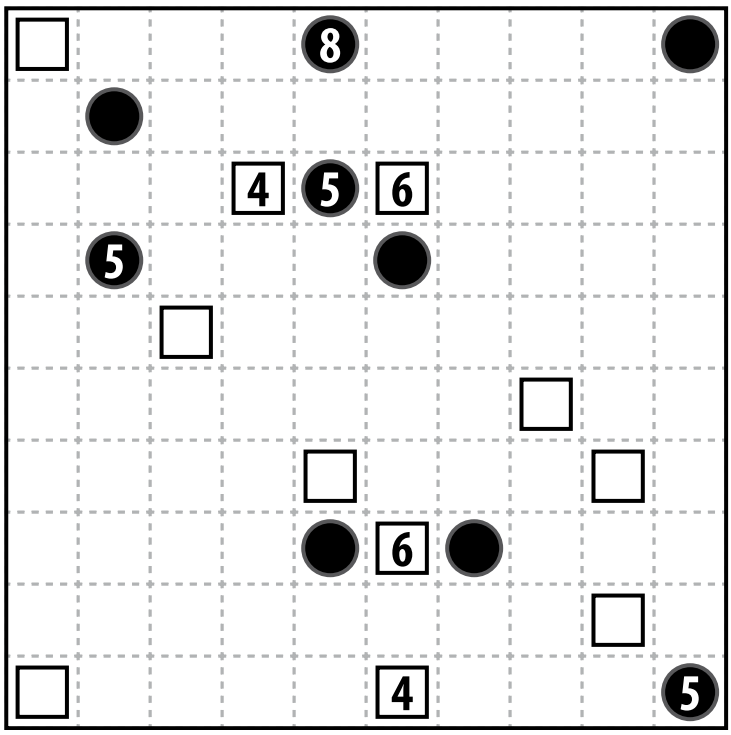
Answer: For each designated row, enter the letter for each cell, from left to right. The letter for a cell is 'I' if the loop goes straight through the cell, 'L' if the loop turns in the cell, and 'X' if the loop does not go through the cell. You may use three other letters or numbers, as long as they are distinct.

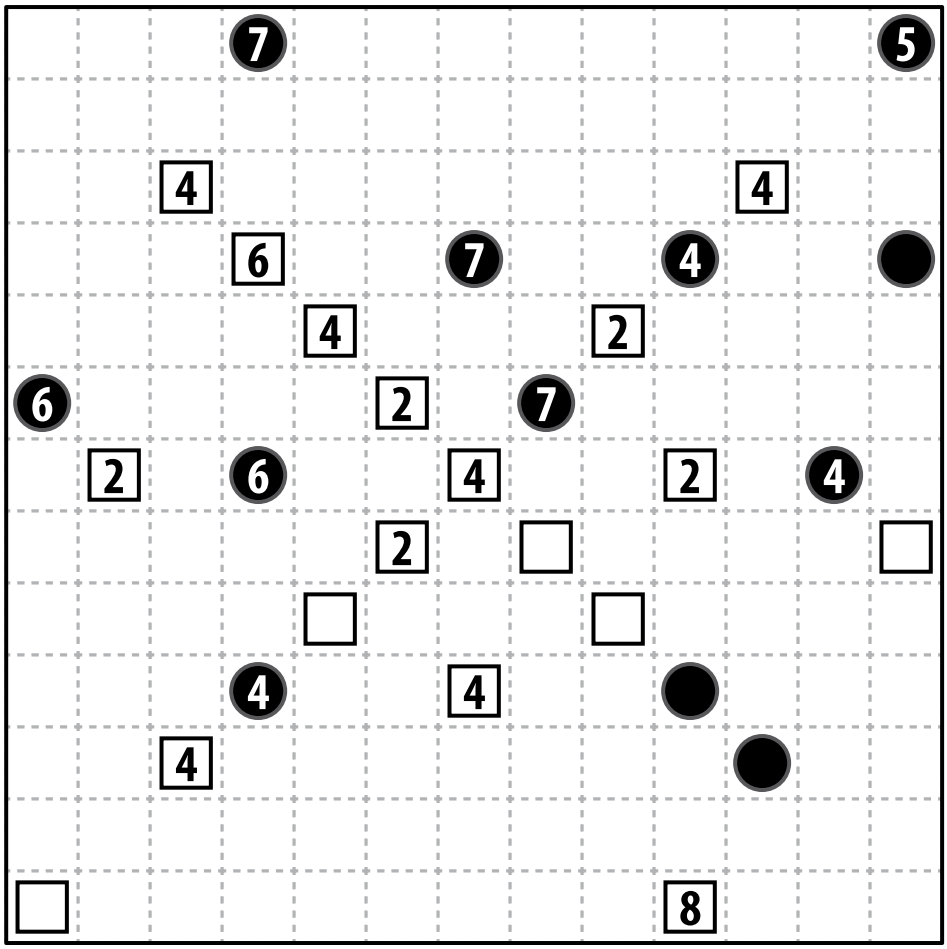
Example Answer: LLIILL, IXLLXI



7a

7b

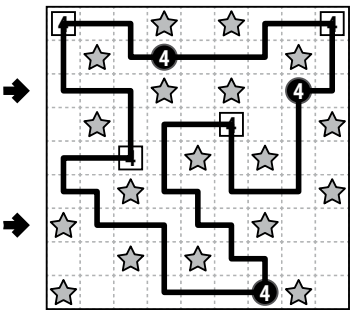




8a

8b

9. Balance Loop (Star Battle) [Chandrachud Nanduri] (71 points)



Draw a single loop that passes orthogonally through centers of cells. The loop cannot intersect itself or enter the same cell more than once.

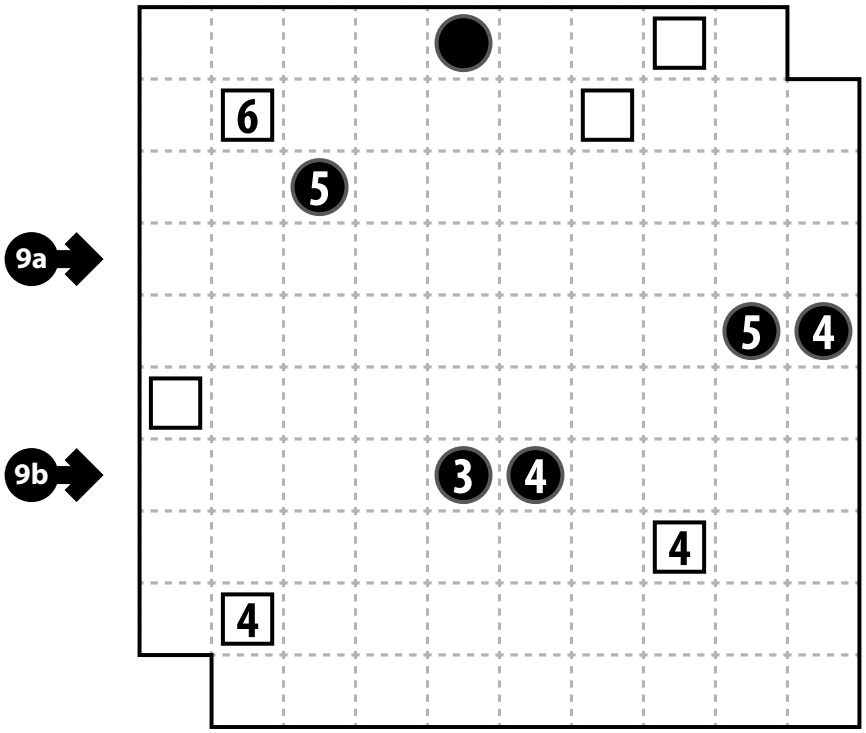
The loop must go through all cells with a provided symbol or number. For each cell on the loop, consider an "arm" to be the loop segment between the center of that cell and the next or previous turn in the loop; each cell therefore has two arms. A white square in a cell indicates that its two arms are of equal length; A black circle in a cell indicates that its two arms are of unequal length. A number in a cell indicates the sum of the lengths of its two arms. (The length of an arm is considered to be the number of cell borders it goes through.)

Also, place stars into some cells in the grid, no more than one star per cell. Each row and each column must contain exactly two stars. Cells with stars cannot touch each other along an edge or a corner.

The loop cannot go through any cells with stars.

Answer: For each designated row, enter the letter for each cell, from left to right. The letter for a cell is 'I' if the path goes straight through the cell, 'S' if the path turns in the cell or has a star, and 'X' if the path does not go through the cell and does not have a star. You may use three other letters or numbers, as long as they are distinct.

Example Answer: SISSXSXSS,SSISSSSXX

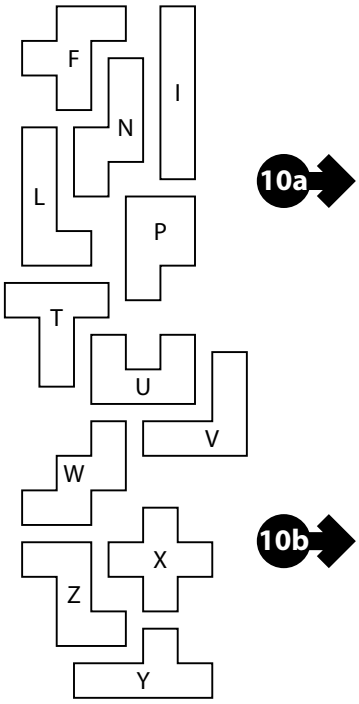


10-11. Pentopia [Prasanna Seshadri] (30, 46 points)

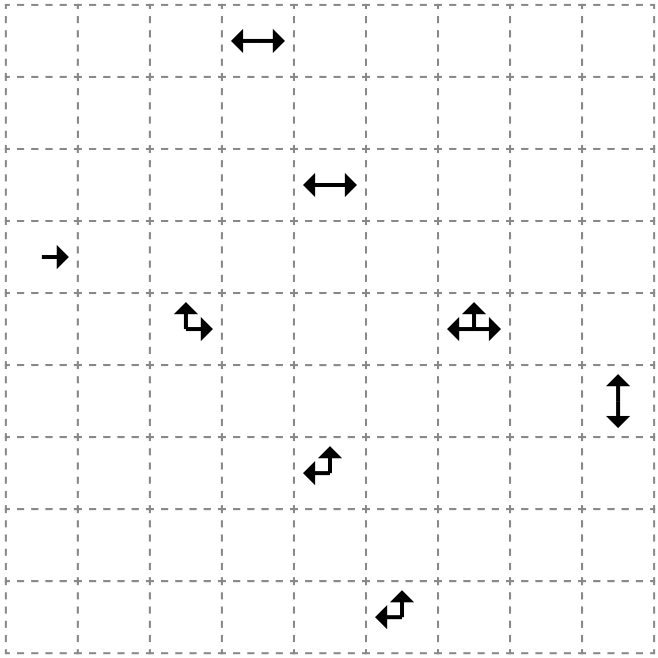
Shade some empty cells so that the shaded cells form the shapes of different pentominoes. Each pentomino shape is used at most once, but can be rotated or reflected. Pentominoes cannot touch along edges or corners. Arrows in a cell indicate *all* closest shaded cell(s) to that cell along the four orthogonal directions (if there are multiple cells of the same closest distance to the cell, there will be multiple arrows).

The diagram that shows the letter for each pentomino is only used for entering your answer.

Answer: For each designated row, enter the letter for each cell, from left to right. The letter for a cell is the letter for the corresponding pentomino, and is 'B' if the cell is not part of a pentomino.

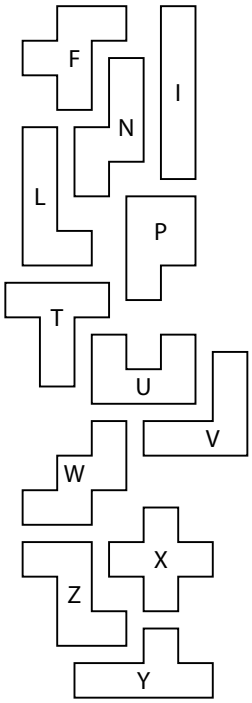


10a



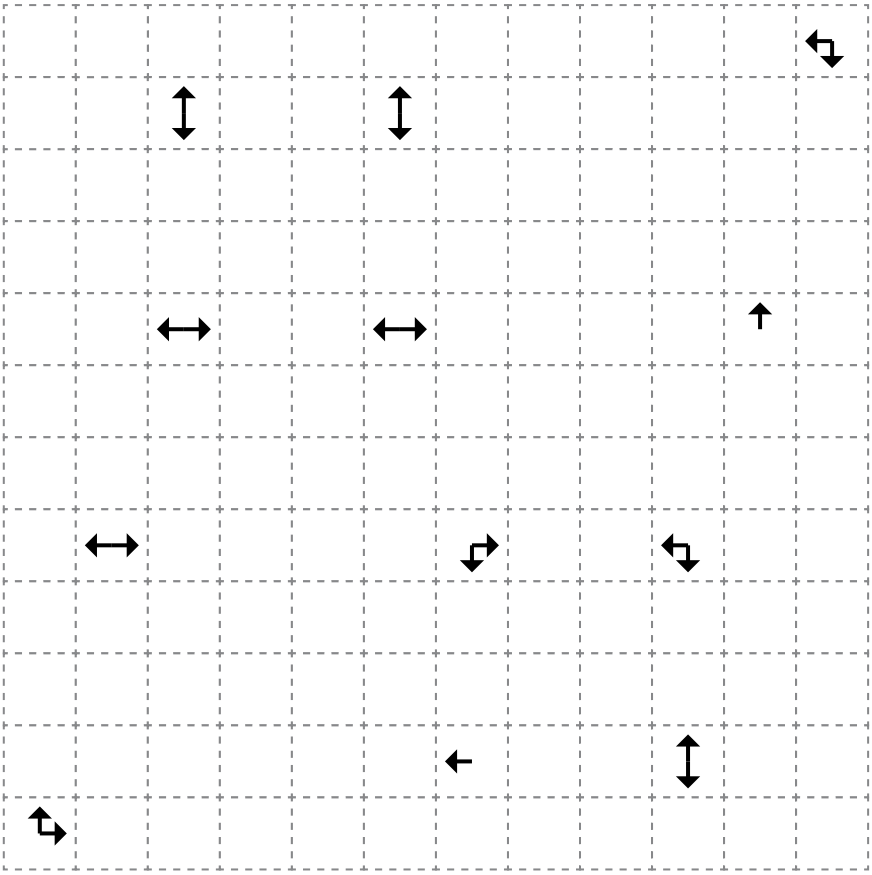
10b

Example Answer:
`PPBBBW,BBBBBB,BBBLBB`

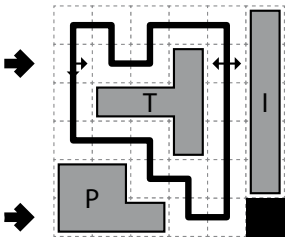


11a

11b



12. Pentopia (Loop) [Prasanna Seshadri] (110 points)



Shade some empty cells so that the shaded cells form the shapes of different pentominoes, and draw a single non-intersecting loop through the centers of all unshaded cells. Loop paths must be orthogonal.

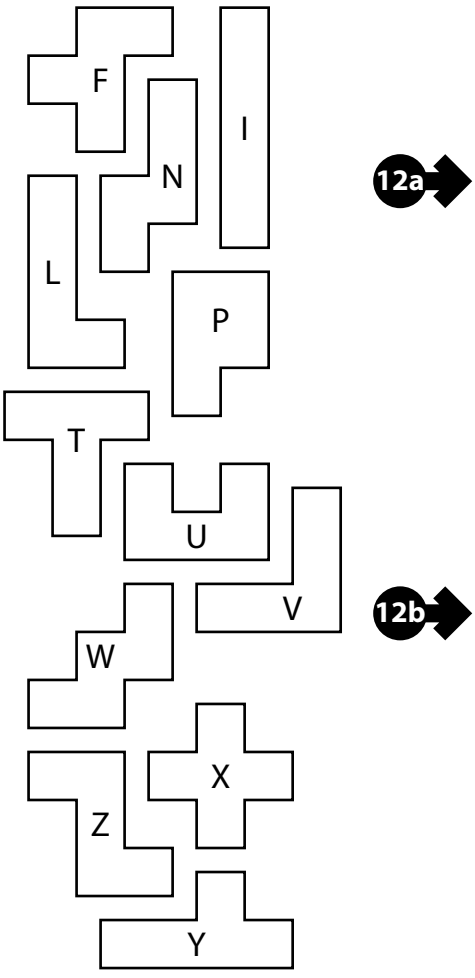
Some cells may be black; do not shade them and do not draw the loop through them. Cells with arrows, however, must be part of the loop.

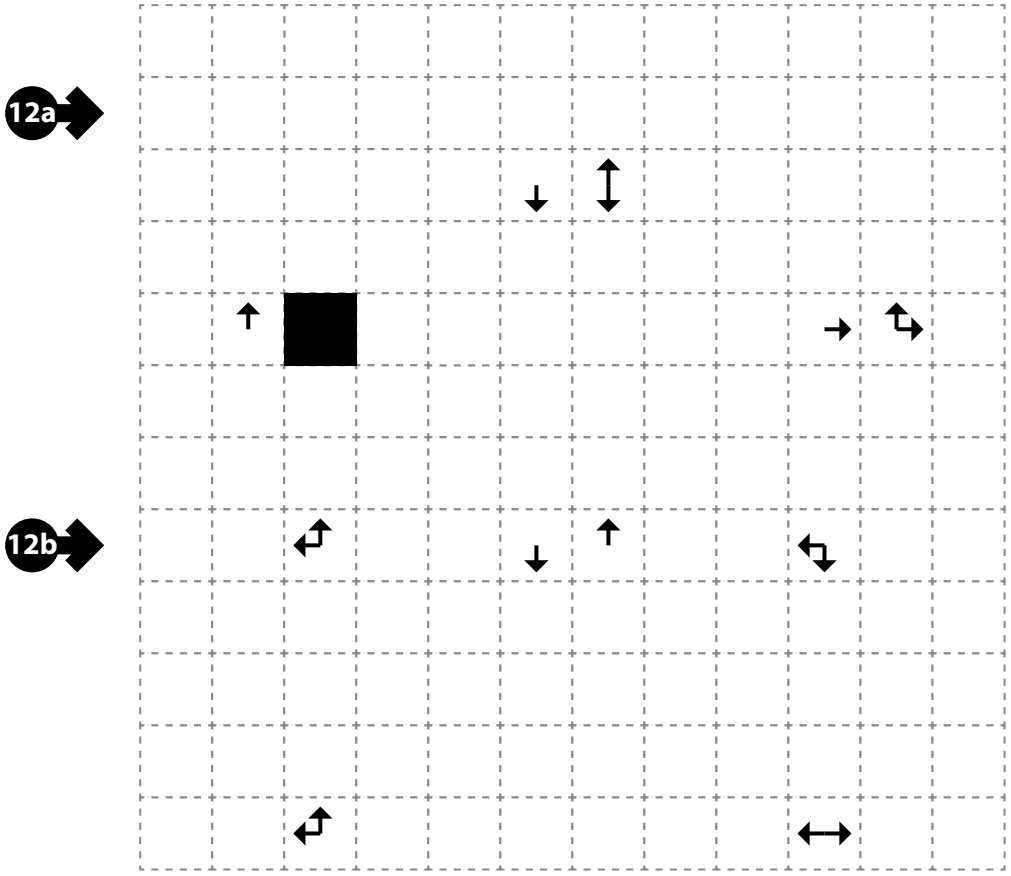
Each pentomino shape is used at most once, but can be rotated or reflected. Pentominoes cannot touch along edges or corners. Arrows in a cell indicate *all* closest pentomino cell(s) to that cell along the four orthogonal directions (if there are multiple cells of the same closest distance to the cell, there will be multiple arrows).

The diagram that shows the letter for each pentomino is only used for entering your answer.

Answer: For each designated row, enter the letter for each cell, from left to right. The letter for a cell is '`I`' if the loop goes straight through the cell, '`L`' if the loop turns in the cell, '`B`' if the cell is black, or the letter for the corresponding pentomino otherwise.

Example Answer: `ILLTII,PPPLLB`





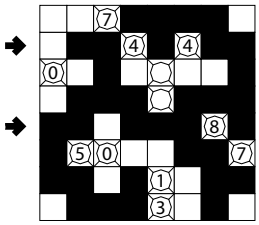
13-14. Canal View [Prasanna Seshadri] (37, 100 points)

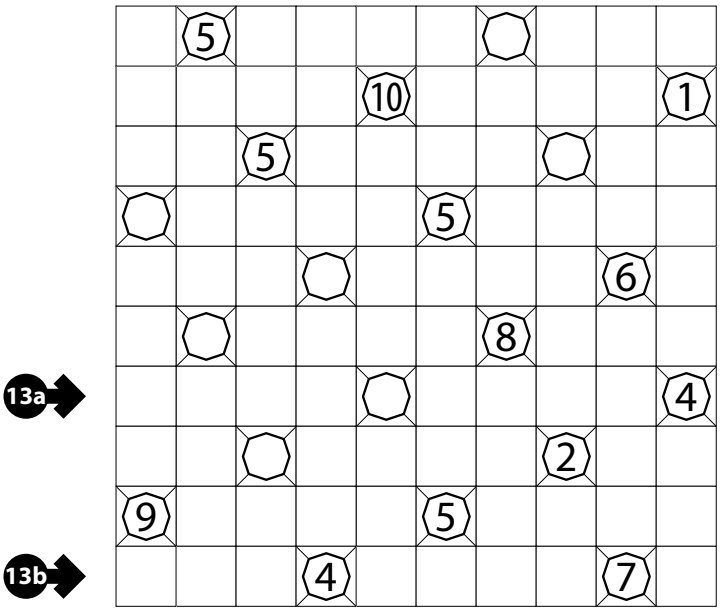
Shade some empty cells; cells with octagons cannot be shaded. All shaded cells connect along edges to create a single connected region. (It is permissible for the region to touch itself at a corner, but touching at a corner does not connect the region.) No 2×2 group of cells can be entirely shaded.

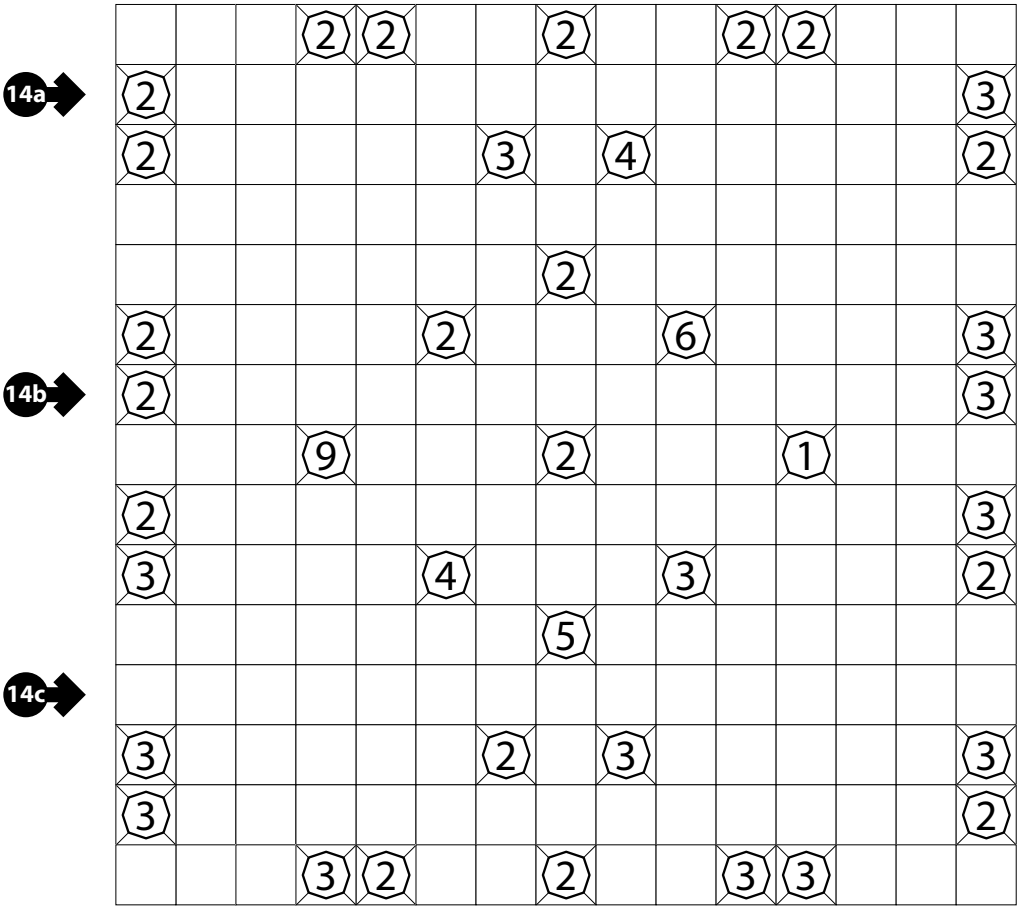
Each number in an octagon indicates the total count of shaded cells connected in line vertically and horizontally to the numbered cell.

Answer: For each designated row, enter its contents from left to right. Use 'X' for an unshaded cell and 'O' for a shaded cell. You may use two other letters or numbers, as long as they are distinct.

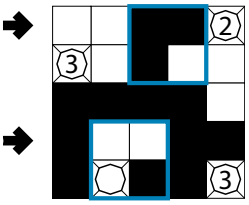
Example Answer: XOOXOXOO, OOXOOOXO







15. Canal View (Anti-clone) [Prasanna Seshadri] (30 points)



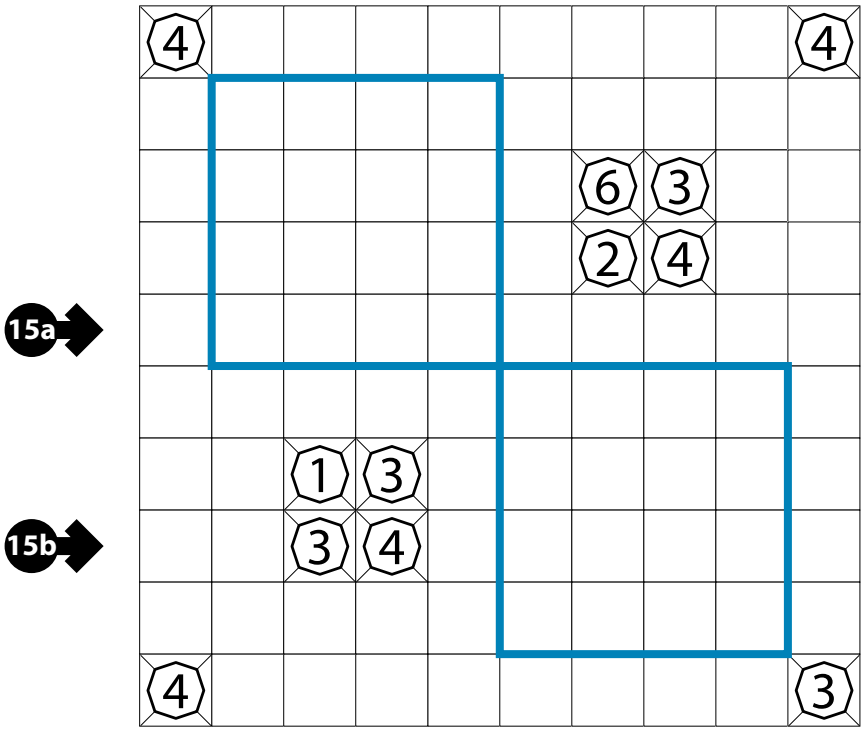
Shade some empty cells; cells with octagons cannot be shaded. All shaded cells connect along edges to create a single connected region. (It is permissible for the region to touch itself at a corner, but touching at a corner does not connect the region.) No 2×2 group of cells can be entirely shaded.

Each number in an octagon indicates the total count of shaded cells connected in line vertically and horizontally to the numbered cell.

The two outlined regions match in shape and orientation. If a cell in one region is shaded, then the matching cell in the other region must be unshaded. If a cell is one region is unshaded, then the matching cell in the other region must be shaded.

Answer: For each designated row, enter its contents from left to right. Use 'X' for an unshaded cell and 'O' for a shaded cell. You may use two other letters or numbers, as long as they are distinct.

Example Answer: XXOOX, OXXOO



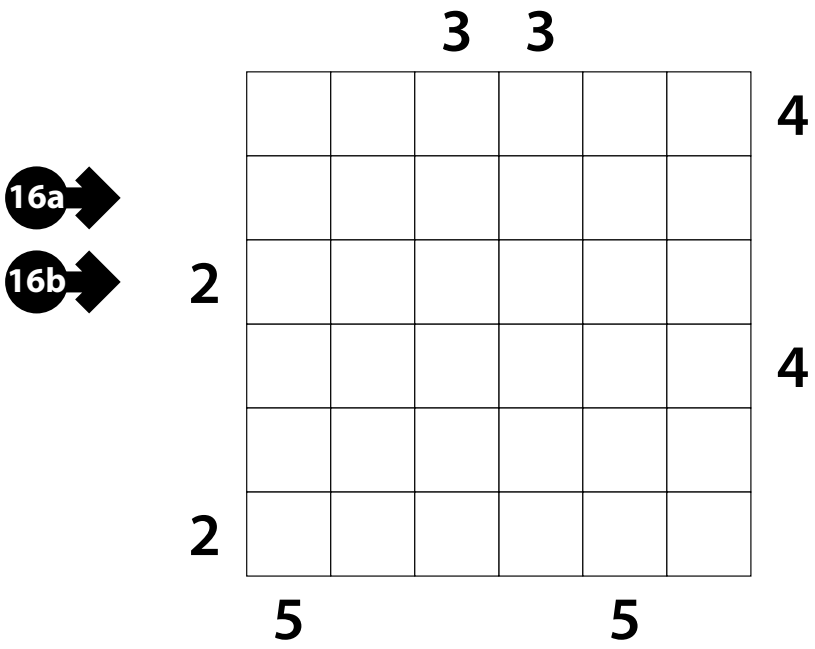
16-17. Skyscrapers [Ashish Kumar] (24, 136 points)

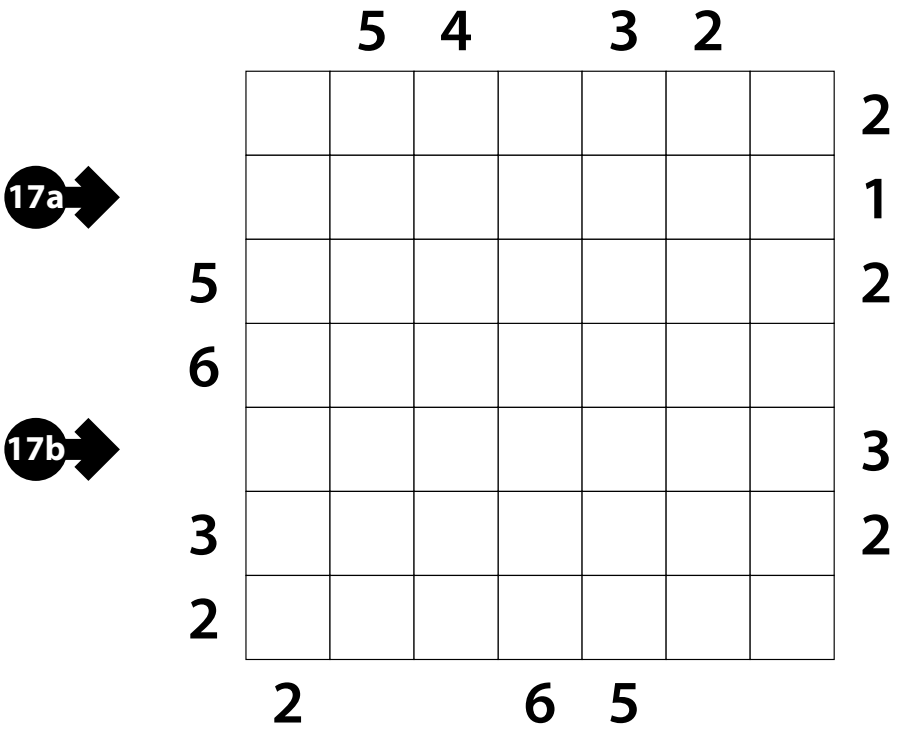
Place a number from 1 to X into each cell so that each number appears exactly once in each row and column. (X is the number of cells in each row.) Each number represents a skyscraper of its respective height. The numbers outside the grid indicate how many skyscrapers can be seen in the respective row or column from the respective direction; shorter skyscrapers are hidden behind taller ones. Some numbers may already be filled in for you.

Answer: For each designated row, enter its contents from left to right. Do *not* include any numbers outside the grid.

Example Answer: `45312,23541`

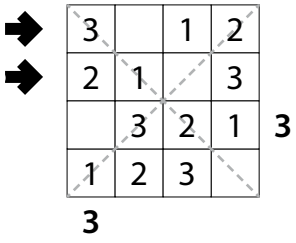
				5		
→	4	5	3	1	2	3
	5	4	1	2	3	3
4	1	2	4	3	5	
→ 3	2	3	5	4	1	
	3	1	2	5	4	
		4	2			





18. Skyscrapers (With Blanks, Distinct Diagonals) [Ashish Kumar] (31 points)

Place a number from 1 to X-1 into some cells so that each number appears exactly once in each row and column. (X is the number of cells in each row.) Each number represents a skyscraper of its respective height. The numbers outside the grid indicate how many skyscrapers can be seen in the respective row or column from the respective direction; shorter skyscrapers are hidden behind taller ones. Some numbers may already be filled in for you.



Also, each number must appear exactly once in each main diagonal. Note that there will be an empty cell in each row, column, and main diagonal.

Answer: For each designated row, enter its contents from left to right. Use 'X' for an empty cell. Do *not* include any numbers outside the grid.

Example Answer: `3X12,21X3`