

WPF PUZZLE GP 2022 COMPETITION BOOKLET

Host Country: United Kingdom

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Special Notes: An earlier version of the Instruction Booklet accidentally omitted the sentence "You may use two other characters, as long as they are distinct." from the instructions to puzzle 6 (Heyawake).

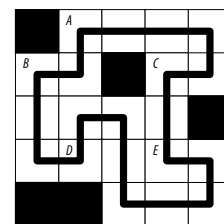
1. Loop (simple) [Sam Cappleman-Lynes] (12 points)

Draw a single closed loop (without intersections or crossings) through the centers of all white cells. Loop paths must be orthogonal.

The letters in the grid are for Answer purposes only.

Answer: Starting at the "A" in the upper-left and heading to the right, enter all the letters in the grid in the order in which the loop encounters them, ending at the letter "A" (again).

Example Answer: ACEDBA



1

	A								
									B
									C
	D								
						E			
								F	
G			H						

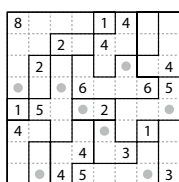
4. Fillomino [Sam Cappleman-Lynes] (37 points)

Divide the grid along the dotted lines into regions (called polyominoes) so that no two polyominoes with the same area share an edge. Inside some cells are numbers; each number must equal the area of the polyomino it belongs to. A polyomino may contain zero, one, or more of the given numbers. (It is possible to have a "hidden" polyomino: a polyomino without any of the given numbers. "Hidden" polyominoes may have any area, including a value not present in the starting grid, such as a 6 in a puzzle with only clues numbered 1-5.)

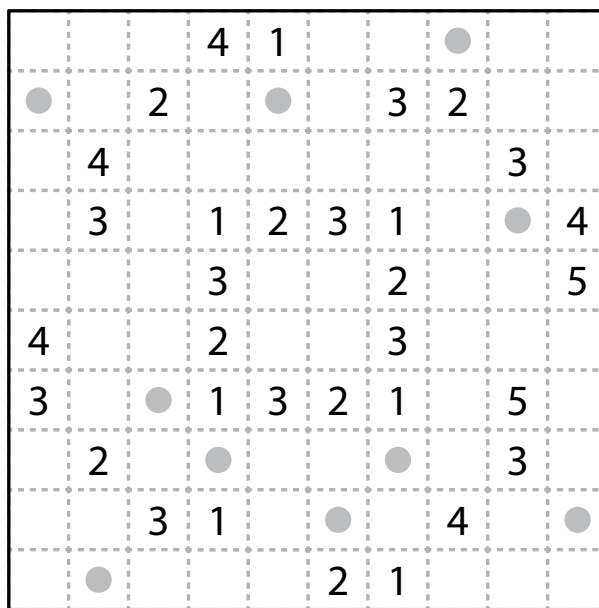
The dots in cells are only used for entering your answers.

Answer: Enter the area of the polyomino each dot is in, reading the dots from left to right. (Ignore which row the dots are in.) Use only the last digit for two-digit numbers; e.g., use '0' for a polyomino of size 10.

Example Answer: 82523655



→ 8 2 5 2 3 6 5 5



5. Coral [Sam Cappleman-Lynes] (30 points)

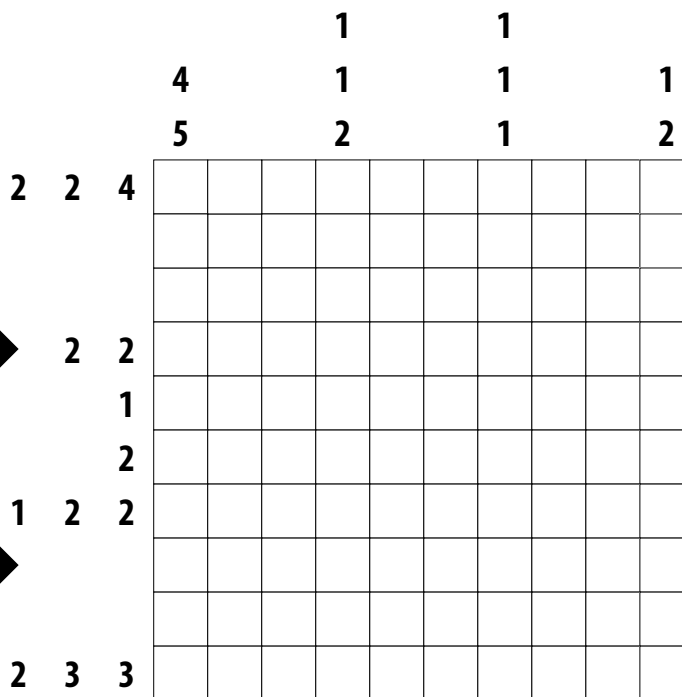
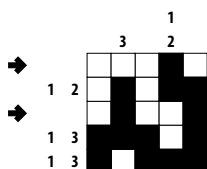
Shade some cells black (leaving the other cells white) such that all shaded cells are connected orthogonally into a single region. All non-shaded cells must be connected orthogonally (through other non-shaded cells) to the edge of the grid. No 2x2 group of cells can be entirely shaded black.

The numbers to the left of (and above) the main grid represent the lengths of contiguous blackened cell blocks in the corresponding row (or column). The lengths are *not* necessarily given in order from left to right (or top to bottom), and cell blocks must contain at least one unblackened cell between them. As a special case, if the single clue "0" is given, it means there must be no blackened cells in that row (or column).

It is possible that not all rows and columns have given numbers. It is up to you to determine what cells to blacken without that information.

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

Example Answer: oooxo, oxoox





6. Heyawake [Sam Cappleman-Lynes] (41 points)

Shade some cells black so that all remaining cells are connected orthogonally and no two black cells share an edge. The grid is divided into regions by thick borders; a number in a region indicates exactly how many cells in that region must be shaded black. (Cells with numbers may or may not be shaded black.) Every "word" in the grid (a group of unblackened cells connected to each other either only horizontally or only vertically) may not cross more than one thick border.

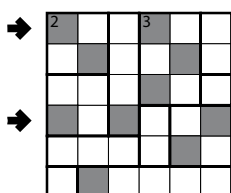
6a →

4									
3			4			2			1
1									
1		3			4			2	
4									

6b →

Answer: For each indicated row, enter its contents from left to right. Use 'o' for an unshaded cell and 'x' for a black cell. Ignore borders and numbers when entering your answer. You may use two other characters, as long as they are distinct.

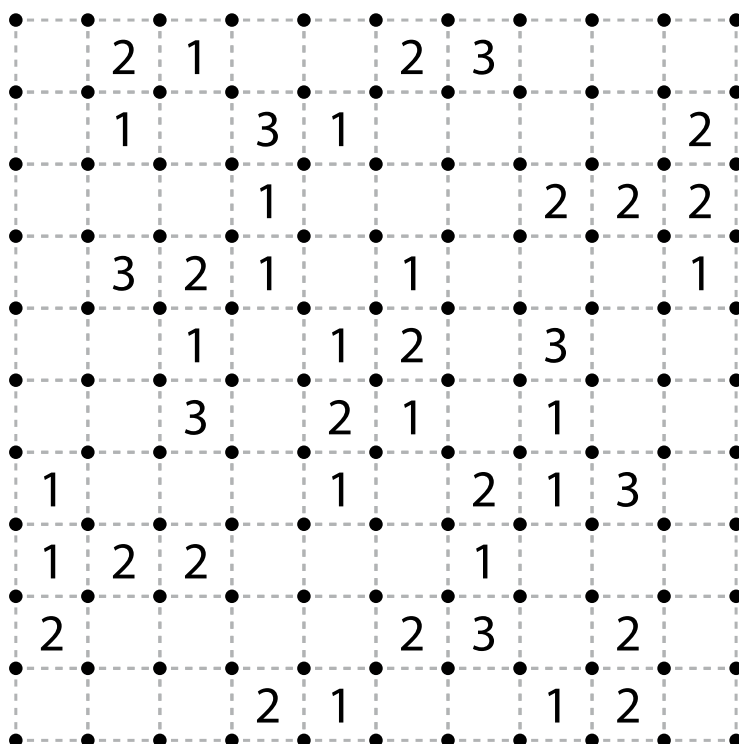
Example Answer: xooxoo, xooxoo



7. Slitherlink [Sam Cappleman-Lynes] (66 points)

Draw a single, non-intersecting loop that only consists of line segments between the dots along the dotted lines. A number inside a cell indicates how many of the edges of that cell are part of the loop.

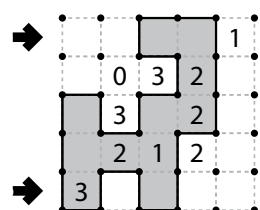
7a →



7b →

Answer: For each designated row, enter its contents from left-to-right. Use 'o' for a cell inside the loop and 'x' for a cell outside the loop. You may use two other characters, as long as they are distinct.

Example Answer: xxoox, oxoxx





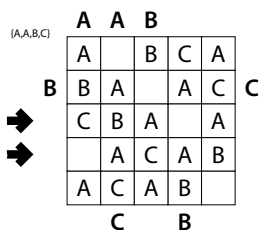
8. Easy As (Non-Adjacent Duplicates) [Tom Collyer] (12 points)

Place letters of the specified list into some cells, no more than one letter per cell, so that each letter in the list appears the same number of times in the list as it appears in each row and each column. The letters outside the grid indicate the first letter that can be seen in the respective row or column from the respective direction.

Cells that touch orthogonally may never contain the same letter.

Answer: For each designated row, enter its contents. Do *not* include any letters outside the grid. Use 'x' for an empty cell.

Example Answer: CBAXA, XACAB



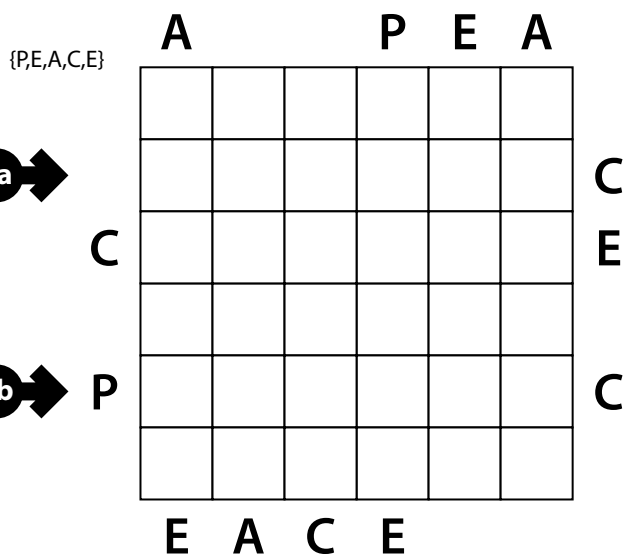
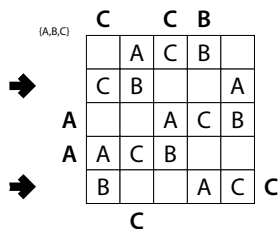
9-10. Easy As (No-Touch) [Tom Coward] (4, 48 points)

Place letters of the specified list into some cells, no more than one letter per cell, so that each letter appears exactly once in each row and column. The letters outside the grid indicate the first letter that can be seen in the respective row or column from the respective direction.

Cells that touch diagonally may never share the same letter.

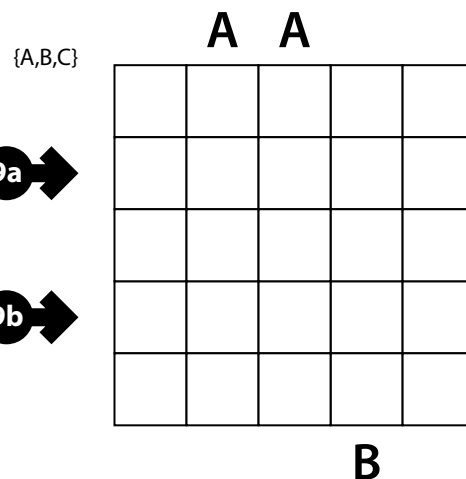
Answer: For each designated row, enter its contents. Do *not* include any letters outside the grid. Use 'x' for an empty cell.

Example Answer: CBXXA, BXXAC



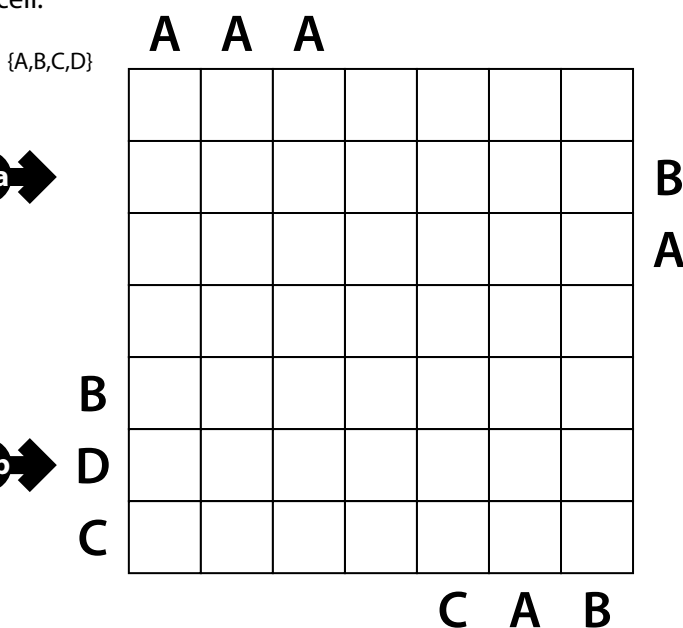
8a →

8b →



9a →

9b →



10a →

10b →



11. LITS (Borders) [Tom Coward] (31 points)

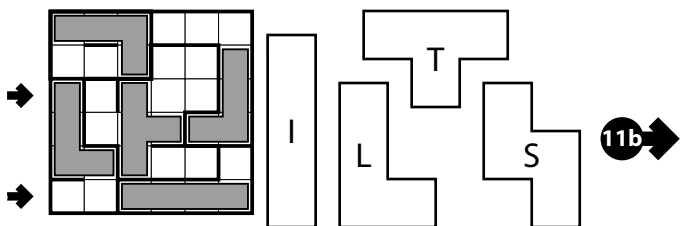
Shade exactly four connected cells in each outlined region (with at least four cells) to form a tetromino, so that the following conditions are true: (1) All tetrominoes are connected into one large shape along their edges; (2) No 2x2 group of cells can be entirely shaded; (3) When two tetrominoes share an edge, they must not be of the same shape, regardless of rotations or reflections. (Not all four possible shapes have to be present in the grid; for example, it is possible for your solution to not have any "I" shapes.)

Some outlined cell edges are not region boundaries. For each such edge, at least one cell with that edge must remain unshaded.

A list of shapes to the letters "LITS" is provided. This is only needed for entering your answer.

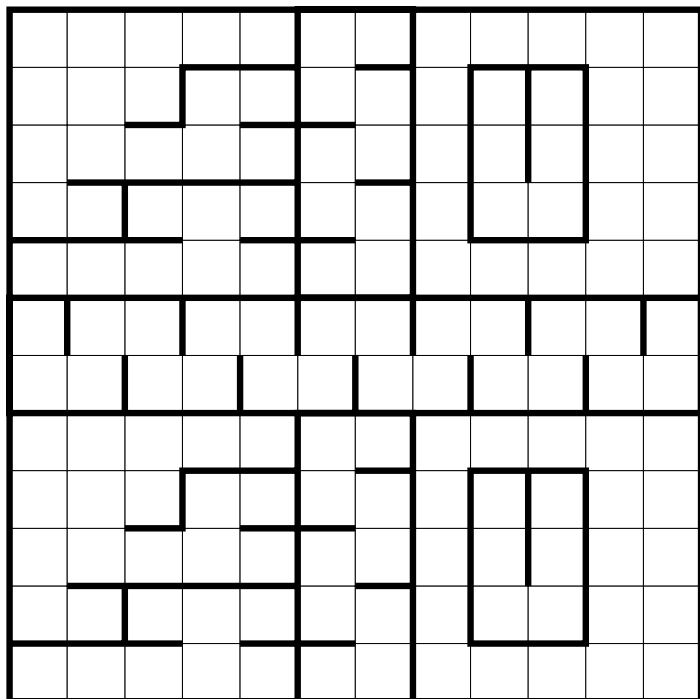
Answer: For each designated row, enter the contents of each cell, from left to right. For each cell, its contents are the letter of the tetromino occupying that cell, or the letter 'X' if the cell is not shaded.

Example Answer: LXTXXL, XXIIII



11a →

11b →

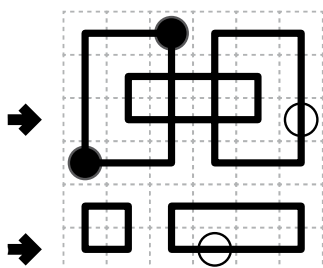


12. Ring-Ring (Masyu) [Tom Coward] (26 points)

Draw multiple loops that pass orthogonally through centers of cells. Each loop must be rectangular in shape (squares are considered rectangles). Every cell must be used in at least one loop. Loops may intersect, but only in cells without circles, and both loops must be going straight through those cells. The loop must go straight through the cells with white circles, with a turn in at least one of the cells immediately before or after each white circle. The loop must make a turn in all the black circles, but must go straight in both cells immediately before and after each black circle.

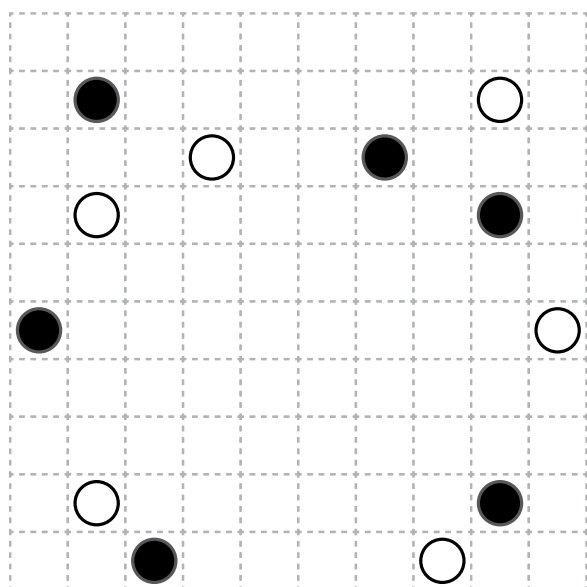
Answer: For each designated row, enter the letter for each cell, from left to right. The letter for a cell is 'I' if a single loop goes straight through the cell, 'L' if a loop turns in the cell, and 'X' if two loops go through the cell. You may use other letters or numbers, as long as they are distinct.

Example Answer: ILXXLI, LLLIIL



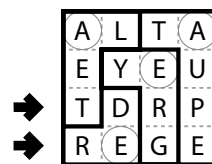
12a →

12b →



13-14. L-Words [Sam Cappleman-Lynes, David McNeill] (34, 55 points)

Divide the grid into "L"-shaped regions along the grid lines. An "L"-shaped region includes one "pivot" cell and two "end" cells (all three must be distinct). Each end cell must be in the same row or column as the pivot, and all cells between the end and pivot along that row or column must be in the region. No other cells are allowed to be in the region. The two end cells cannot be in the same row or column. Some cells are marked with circles; those must be pivot cells. Some region borders may already be drawn for you.

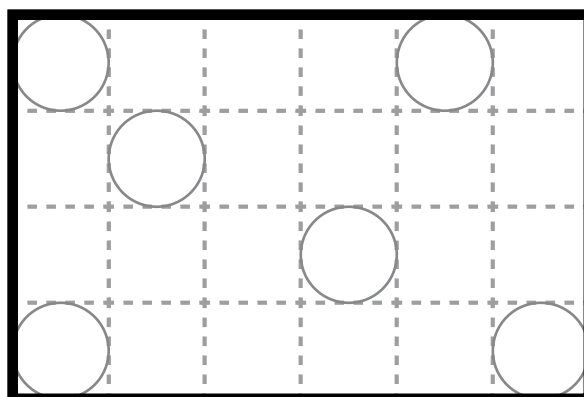


Then, put one letter into each cell so that the given words can be read in the regions. Every word must appear in the grid exactly once and use all the cells in one region, starting and ending on the end cells of that region. Cells with identical letters must not touch at a corner or an edge.

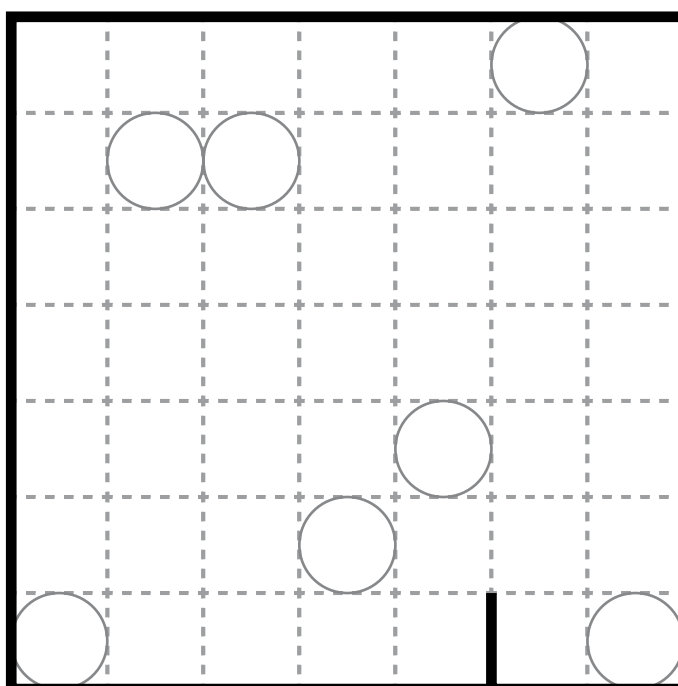
Answer: For each designated row, enter its contents from left to right.

Example Answer: TDRP, REGE

KAT
OAK
PALM
PEAR
LEMON
MAPLE



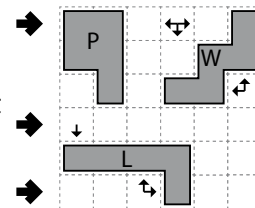
OVAL
CIRCLE
SQUARE
RHOMBUS
TRIANGLE
RECTANGLE
TRAPEZIUM





15. Pentopia [Sam Cappleman-Lynes] (34 points)

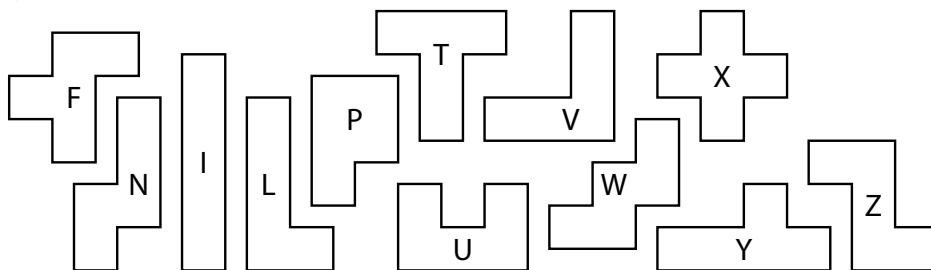
Shade some empty cells black so that the black cells form the shapes of different pentominoes. Each pentomino shape is used at most once, but can be rotated or reflected. Pentominoes cannot touch along edges or corners. Arrows in a cell indicate *all* closest shaded cell(s) to that cell along the four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



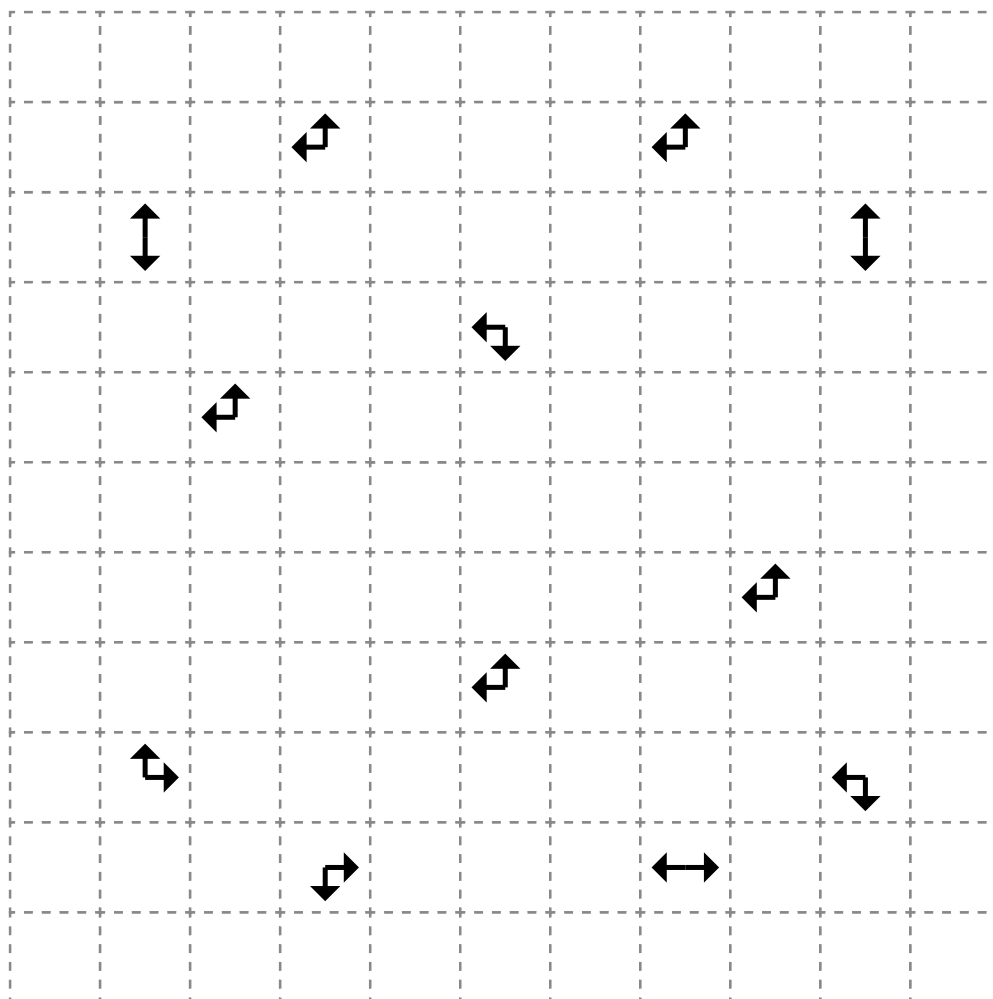
The letters for the pentominoes, as will be provided in the diagram, are only used for entering your answer.

Answer: For each designated row, enter the letter for each pentomino that appears in that row, from left to right. Within a row, if a pentomino occupies more than one cell, only enter that pentomino's letter once. If there are no pentominoes in that row, enter a single letter 'A'.

Example Answer: PW, A, L



15a →



15b →

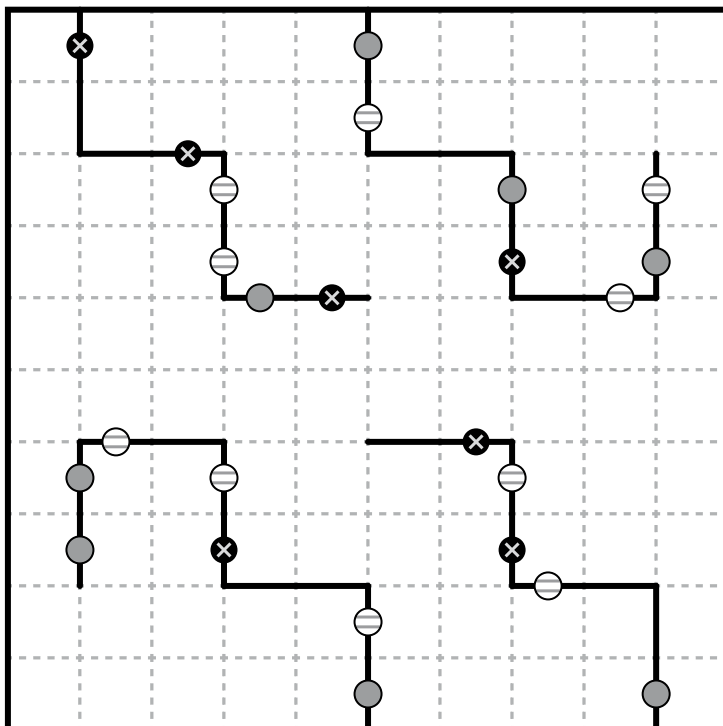
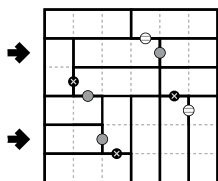


16. Voxas [Sam Cappleman-Lynes] (48 points)

Divide the grid into rectangular-shaped regions along the grid lines. Every region must have a height of 1 cell ("horizontal") or a width of 1 cell ("vertical"), and the other dimension must be 2 ("short") or 3 ("long"). Some region boundaries are given to you. Additionally, some region boundaries are marked with a dot. A white dot (with an "=" symbol) must touch two regions with identical height and width. A black dot (with an "X" symbol) must touch a horizontal region and a vertical region; it must also touch a short region and a long region. A gray dot (with no symbol) means that that boundary cannot be marked with a white dot nor a black dot.

Answer: For each designated row, enter the height of the region containing each cell, from left to right. (Enter multiple 1s for horizontal regions.)

Example Answer: 211111, 112333



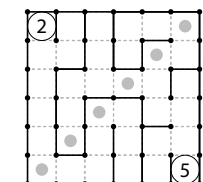
17. Arboretum [Tom Coward] (78 points)

Draw cell edges along the dotted lines such that the grid is divided into regions named "trees", each one containing exactly one circled cell, and there is a unique path to get from any cell to a circled cell (going orthogonally through dotted lines). Any non-circled cell with only one undrawn edge is considered a "leaf". Each tree must have at least one leaf. For each tree, all its leaves are in different rows and different columns. If a circled cell is numbered, that number represents the number of leaves in that cell's tree.

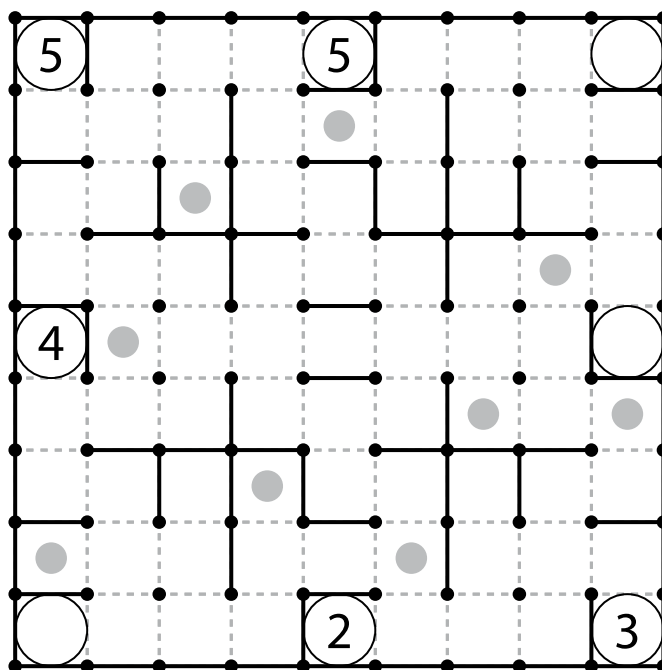
The dots in cells are only used for entering your answers.

Answer: Enter the number of leaves in the tree each dot is in, reading the dots from left to right. (Ignore which row the dots are in.) Use only the last digit for two-digit numbers; e.g., use '0' for a tree with 10 leaves.

Example Answer: 252555



→ 2 5 2 5 5 5





20. Eels [Sam Cappleman-Lynes] (60 points)

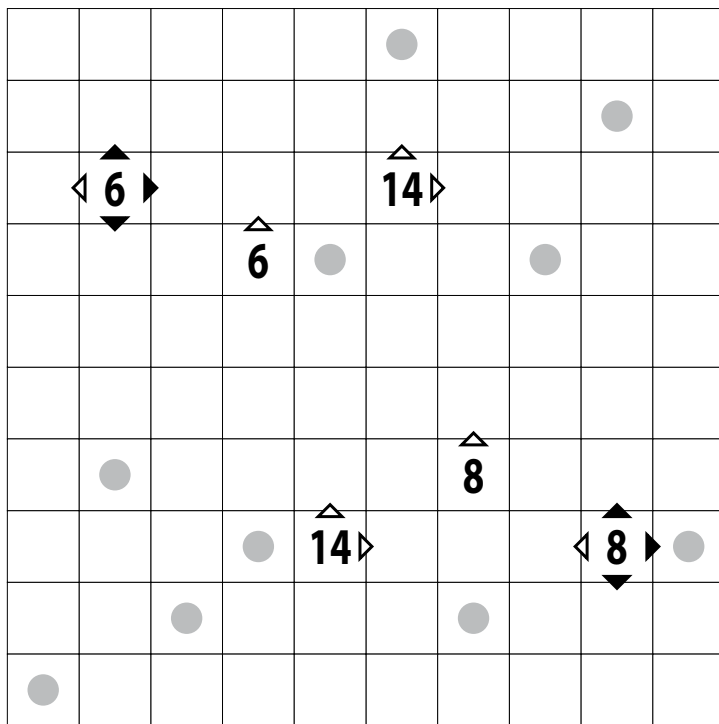
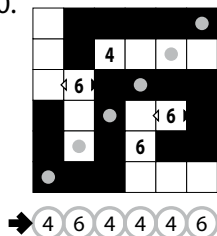
Shade some cells black and leave the remaining cells white so that the grid is divided into eels. An eel is a series of at least four cells of the same color (black or white) that touch orthogonally in sequence. Eels may not touch other eels of the same color along a cell edge. No eel may loop around to touch itself, not even diagonally. (In other words, if two cells in the same eel touch orthogonally, then they must be exactly one cell apart along the path of the eel, and if two cells in the eel touch diagonally, then they must be exactly two cells apart along the path of the eel.)

Inside some cells are numbers; each number must equal the area of the eel it belongs to. An eel may contain zero, one, or more of the numbered cells. Numbered cells may contain arrows pointing to orthogonally adjacent cells; the color of the arrow indicates whether you must shade the orthogonally-adjacent cell the arrow is pointing to. Numbered cells must be left white.

The dots in cells are only used for entering your answers.

Answer: Enter the area of the eel each dot is in, reading the dots from left to right. (Ignore which row the dots are in.) Use only the last digit for two-digit numbers; e.g., use '0' for an eel of size 10.

Example Answer: 464446



21. Rassi Silai [Sam Cappleman-Lynes] (35 points)

Within each region, find a single orthogonally-connected path (without intersections or crossings) through the centers of all white cells. Cells that contain path endpoints must not share a corner or an edge.

The displayed solution marks cells with path endpoints with circles for illustrative purposes only.

Answer: For each designated row, enter the letter for each cell, from left to right. The letter for a cell is 'I' if a path goes straight through the cell, 'L' if a path turns in the cell, and 'O' if a path has the cell as an endpoint. You may use other letters or numbers, as long as they are distinct.

Example Answer: LOLOLL, OLILOL

