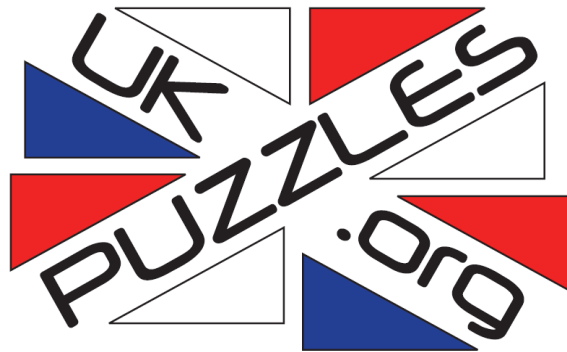




UK Puzzle Championship 2018

INSTRUCTION BOOKLET

Friday 22nd - Monday 25th June, 2018

Competition Rules & General Information

REGISTRATION

To participate in the championship, you will need to register online at the UKPA forums – <http://forum.ukpuzzles.org>. During the registration process, you will be required to enter your real name, and your nationality. International participants are welcomed.

PREPARATION

In order to participate in the championship, you will need access to a printer (with sufficient toner/ink!) to print out the puzzle booklet. To solve the puzzles you will need a pen or a pencil, and possibly an eraser.

COMPETITION SCHEDULE

- The password protected puzzle booklet will be made available online at <http://www.ukpuzzles.org/contests.php?contestid=48> on Thursday 21st June. It is recommended that you download this password-protected pdf before you start the competition.
- The competition will start at **12:00 BST (11:00 GMT) on Friday 22nd June** when the password for the pdf will be made available. Upon retrieving the password, you will have **2 ½ hours** to solve the puzzles, and submit your answers via the entry page. The last time to start will be **23:55 BST on Monday 25th June**.
- The results will be publicly announced at <http://www.ukpuzzles.org> a few days after the contest. The highest scoring UK participant will be declared the 2018 UK Puzzle Champion and the top two UK participants will be selected for the UK team for the WPC to be held in Prague in the Czech Republic in November.

ENTERING & SUBMITTING ANSWERS

To submit your answers, you will need to go to the answer submission page found via <http://www.ukpuzzles.org/contests.php?contestid=48> . Here, for each puzzle, you will be required to enter the relevant answer keys into the form on the page. The answer keys for each puzzle are defined as part of the instructions.

Upon hitting the submit button, your answers will be sent to the server. You may submit answers as many times as you like, but only the last received keys will be subject to scoring.

Unless specifically stated otherwise, multiple answer key parts must be entered in the solution box separated by a comma, with no spaces. Participation is anticipated to be very high and appeals will only be upheld in exceptional circumstances. Therefore, it is VERY IMPORTANT that you check that each answer key submitted is correct.

Urgent matters arising during the contest should be directed towards chairman@ukpuzzles.org . In the event of the web hosting service failing during your participation, email your answer keys before your 2 ½ hours are completed. Answers submitted this way will only be accepted if a hosting failure, or equivalent, has occurred.

CODE OF CONDUCT

All participants are expected to solve the puzzles honestly and fairly. You are not permitted to use any external solving aids of any form or receive assistance from any other individual.

It is strictly forbidden to discuss any details of the championship puzzles, or make their contents known to others, directly or implicitly, via any medium while the contest is live.

The Championship organisers reserve the right to disqualify any participant judged to have acted with improper conduct. The decisions made by the organisers are final.

POINTS & BONUSES

Points will be awarded according to the table on the following page. Participants who submit error free entries to all of the puzzles before the allotted two hours are up will be awarded 6 points per minute, as recorded by the last submission time to the server. Late submissions will not be accepted (as in a WPC environment), so you are advised to submit answers as you solve them, rather than waiting until your time is running out.

N.B. – although the points allocated to a particular puzzle are a general indication of its difficulty and the time expected to solve it, it is possible that your individual experience may vary greatly. Please read the instructions fully and carefully!

Puzzle Examples

The remainder of this instruction booklet gives the instructions as they will appear in the competition booklet, with answer key descriptions, and examples of puzzle types used in the contest. Instructions will be repeated in the competition booklet, but not the examples.

The competition booklet will not have a cover page.

For answer keys that require the information from some rows/columns these should be entered rows from top to bottom followed by columns from left to right with a comma between each row/column. For answer keys that require information about each row then these should be entered as a continuous string without separating commas.

The puzzle types and the points attached to them are detailed below.

Puzzle	Points		Puzzle	Points
#1 & 2 Set Square	10 & 12		#23 Shikaku (Cell Blocks)	15
#3 & 4 Cave	10 & 21		#24 Nino	17
#5 & 6 Calcudoku	13 & 31		#25 Kuromasu	20
#7 & 8 Hitori	13 & 26		#26 Nurikabe	20
#9 & 10 Star Battle	12 & 40		#27 Transparent Yajilin	22
#11 & 12 ABC Box	12 & 31		#28 Futoshiki	27
#13 & 14 Pins	24 & 38		#29 Pentopia	24
#15 & 16 Skyscrapers	26 & 30		#30 Pentomino Division	35
#17 & 18 Double or Nothing	25 & 22		#31 Fillomino (Different Shapes)	39
#19 Different Neighbours	25		#32 Kakuro	33
#20 Touch Me Not	28		#33 Heyawake	20
#21 Finnish Snake	12		#34 Akichiwake	45
#22 Tapa	14		#35 Laser	45
#			#36 Turning Fences	63
			Total	900

PUZZLE AUTHORS

We are indebted to the following authors for designing the puzzles used in this contest:

Bram de Laat
Nikola Zivanovic

Vladimir Portugalov
Numberland

Many thanks also to Bram de Laat, Nikola Zivanovic, Prasanna Seshadri and Tom Collyer for test solving.

1 & 2 Set Square (10 & 12)

Place each of the numbers 1 – 9 in the grid to make all the equations correct. The calculations must be done strictly from left to right and from top to bottom, there is no operations precedence ($3+5\times 2=16$ not 13).

Answer Key: Enter the numbers as they appear in each row.

Example: 345718962

	+		+		12
+		÷		+	
	+		÷		1
–		×		–	
	+		+		17
1		24		11	

3	+	4	+	5
+		÷		+
7	+	1	÷	8
–		×		–
9	+	6	+	2

3 & 4 Cave (10 & 21)

Shade some cells to leave behind a single connected group — the cave. All shaded cells must be connected horizontally or vertically through other shaded cells to an edge of the grid. All numbered cells must be a part of the cave, with each number indicating the total number of cells connected vertically and horizontally to the numbered cell, including the cell itself.

Answer Key: Going clockwise from the top left corner enter the area of the groups of cells that are connected to the outside of the grid that are not part of the cave, separated by commas.

Example: 3,5,1,4

	3		2	
2				3
	3		2	
3				4

	3		2	
2				3
	3		2	
3				4

5 & 6 Calcudoku (13 & 31)

Fill in the grid with the numbers 1 to N (where N is the number of rows or columns in the grid) so that each number is placed once in each row/column. The given value in each bold edged region gives the total when a mathematical operation (addition, subtraction, multiplication or division) is applied to the numbers in the region. For subtraction and division start with the largest number then subtract or divide by the other numbers. The operation sign may or may not be given in the area.

Answer Key: Enter the numbers in the marked rows/columns.

Example: 4123,3214

A 4x4 grid with the following clues and arrows:

- Top-left cell: **4x** with an arrow pointing right.
- Top-right cell: **7+** with an arrow pointing left.
- Bottom-left cell: **9+** with an arrow pointing right.
- Bottom-right cell: **12** with an arrow pointing left.

The grid is divided into four 2x2 regions by bold lines.

A 4x4 grid showing the example solution for the clues above:

4x 4	1	7+ 2	3
1	3	4	2
9+ 3	2	1	12 4
2	4	3	1

7 & 8 Hitori (13 & 26)

Shade some cells so that no number repeats in any row or column. Shaded cells cannot share an edge. All unshaded cells must form a single connected region.

Answer Key: Enter the number of shaded cells in each row.

Example: 211212

A 6x6 grid with the following numbers:

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

A 6x6 grid showing the example solution for the numbers above. Shaded cells are indicated by grey backgrounds:

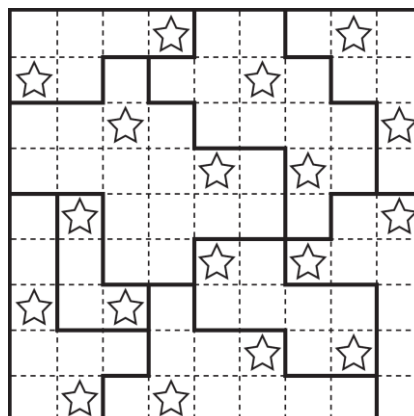
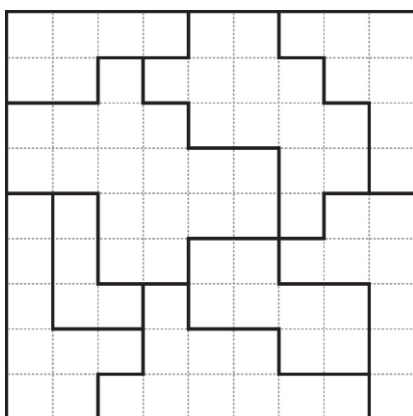
3	5	2	1	4	2
5	3	4	5	2	1
2	4	1	4	3	5
1	4	3	2	4	1
3	2	5	3	1	4
4	1	2	1	5	1

9 & 10 Star Battle (12 & 40)

Place two stars in every row, column and bold edged region. Cells with stars in are not allowed to touch each other, even at a point.

Answer Key: Enter the number of cells between the stars in each row.

Example: 345161111

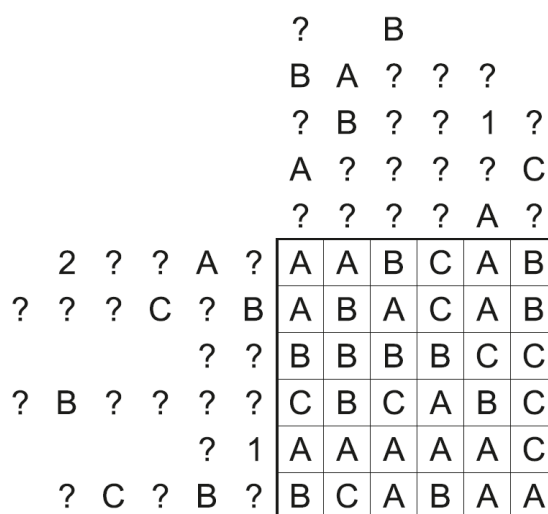
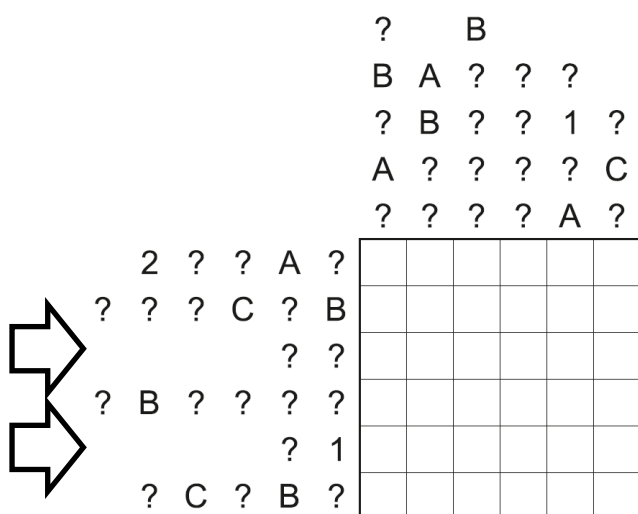


11 & 12 ABC Box (12 & 31)

Place the letters A, B and C in the grid. Clues outside the grid identify the arrangement in that row/column. Repeated letters are given only as single letters, for example, if a row is AABBA, then the clue would be ABA. Question marks indicate distinct letter blocks of unknown length and numbers indicate a letter block of that given length.

Answer Key: Enter the contents of the marked rows/columns.

Example: BBBBCC,AAAAAC

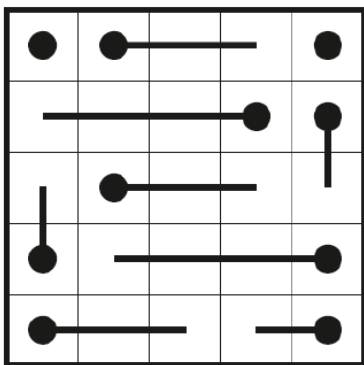
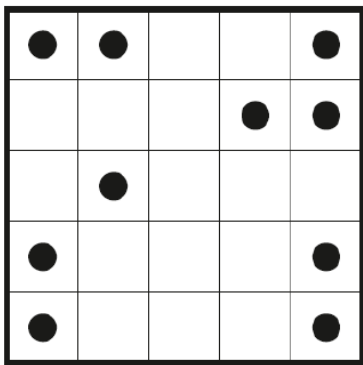


13 & 14 Pins (24 & 38)

Connect the empty cells to the pin heads (dots) to create straight pins of length 0, 1, 2 or 3. The regions occupied by the pins cannot touch another region containing a pin of the same length, even at a point.

Answer Key: Enter the length of the longest horizontal pin on each row. If a row has no horizontal pin enter # for that row (a pin of length 0 will be classed as a horizontal pin)

Example: 23232

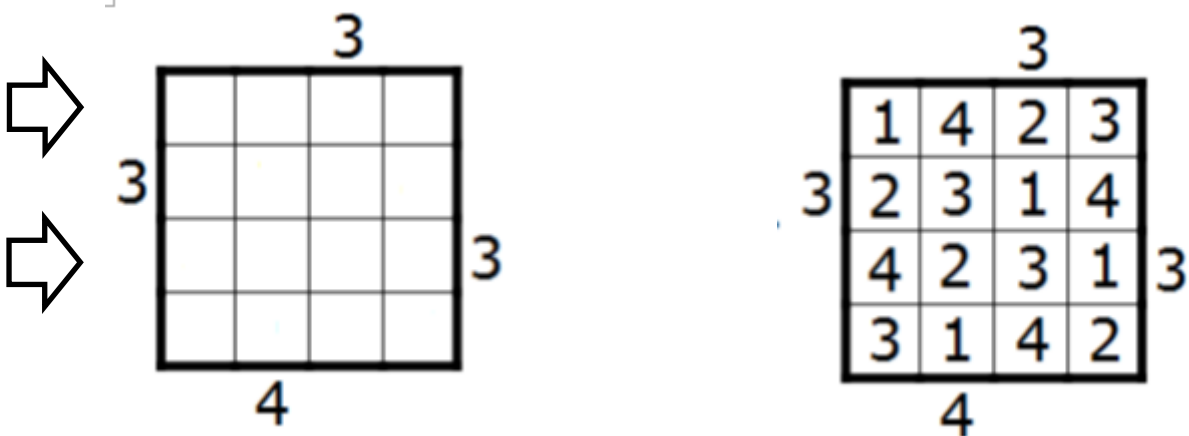


15 & 16 Skyscrapers (26 & 30)

Place the numbers 1-6 (1-4 in the example) once in every row and column. Numbers represent skyscrapers of that height. Numbers outside the grid indicate how many skyscrapers are visible in that row or column from that side. Taller skyscrapers block the view of smaller skyscrapers beyond it.

Answer Key: Enter the contents of the marked rows/columns separated by a comma.

Example: 1423, 4231

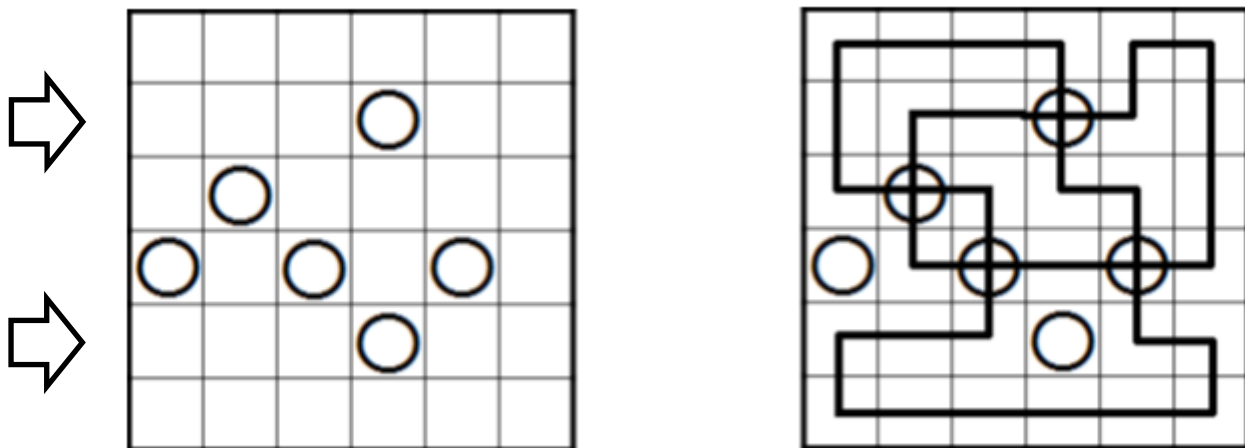


17 & 18 Double or Nothing (25 & 22)

Draw two closed loops in the grid. Loops are not allowed to touch or cross themselves. Each blank cell must be used by exactly one of the loops. Cells with circles are either used by both loops or by neither of the loops. When travelling through a cell with a circle, each loop must always go straight.

Answer Key: Enter the contents of the marked rows/columns using I for passing straight through, L for where a loop makes a turn, X where the loops cross or O for if no loop crosses that cell.

Example: ILIXLI,LILOLL

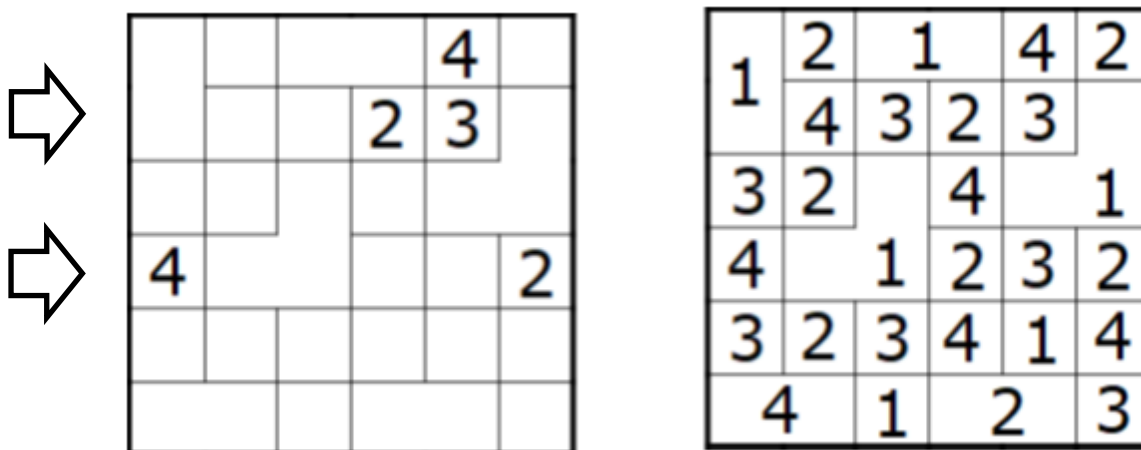


19 Different Neighbours (25)

Place one number from 1-4 into every region. Two regions that touch each other, even at a point cannot contain the same number.

Answer Key: Enter the contents of the marked rows/columns separated by a comma.

Example: 143231,41232



20 Touch Me Not (28)

Fill the grid with numbers 1-5 such that each bold edged region contains the numbers 1-N where N is the number of cells in that region. Cells with identical numbers in cannot touch each other, even at a point.

Answer Key: Enter the number of 4's on each row.

Example: 3142241423

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

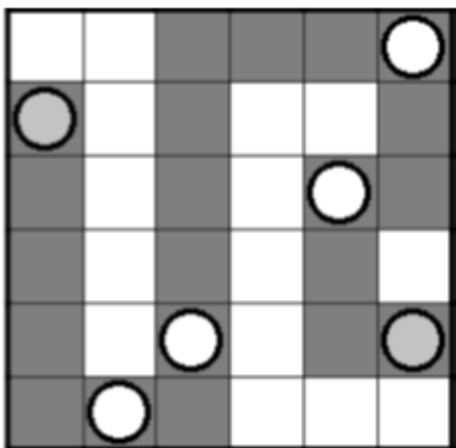
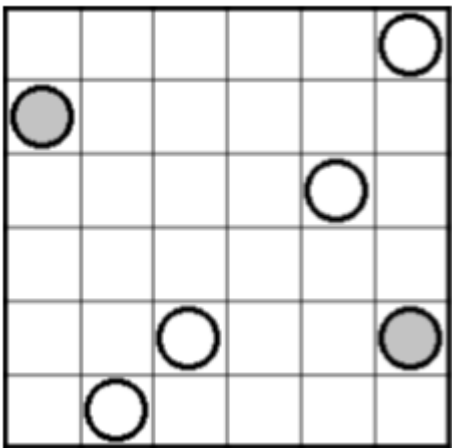
1	4	3	2	3	1	4	2	4	5	3	1	3
5	2	1	5	4	5	3	5	3	1	2	5	2
1	3	4	3	2	1	2	1	4	5	4	3	4
2	5	2	1	4	5	4	5	2	3	1	2	5
4	1	3	5	2	3	2	3	1	5	4	3	1
3	5	2	4	1	4	1	5	4	2	1	5	4
1	4	1	3	2	5	3	2	1	5	3	2	1
5	3	2	5	4	1	4	5	3	2	4	5	4
2	1	4	1	3	2	3	2	4	5	1	2	3
3	5	3	2	4	5	4	1	3	2	4	5	1

21 Finnish Snake (12)

Locate a snake in the grid that is one cell wide. The snake cannot touch itself, even at a point. The snake must go through all cells with circles. The head and tail of the snake are marked by grey circles.

Answer Key: Enter the number of turns the snake makes in each row.

Example: 202012

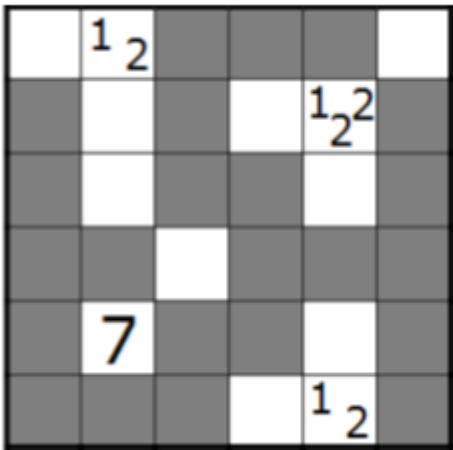
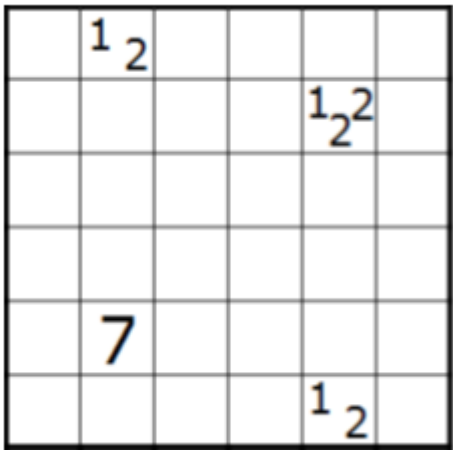


22 Tapa (14)

Shade some cells to form a single connected wall. The wall cannot occupy a 2 by 2 area anywhere. Clues in the grid indicate how many consecutive cells must be shaded round the clue cell. If there is more than one number in a cell these blocks must be separated by at least one empty cell. Clue cells cannot be part of the wall.

Answer Key: Enter the length of the longest group of shaded cells in each row.

Example: 312323

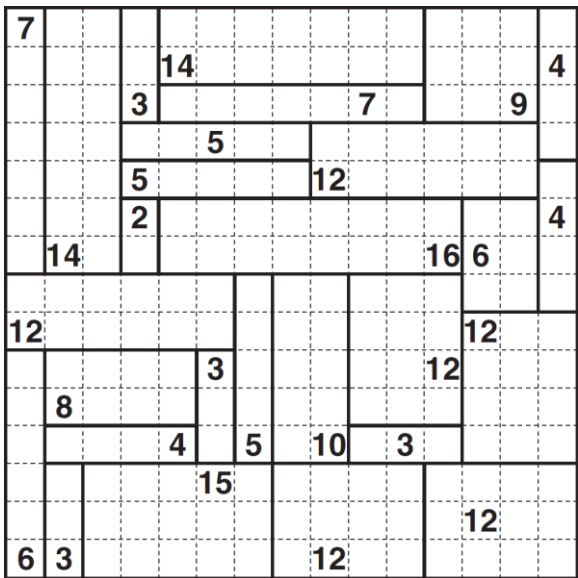
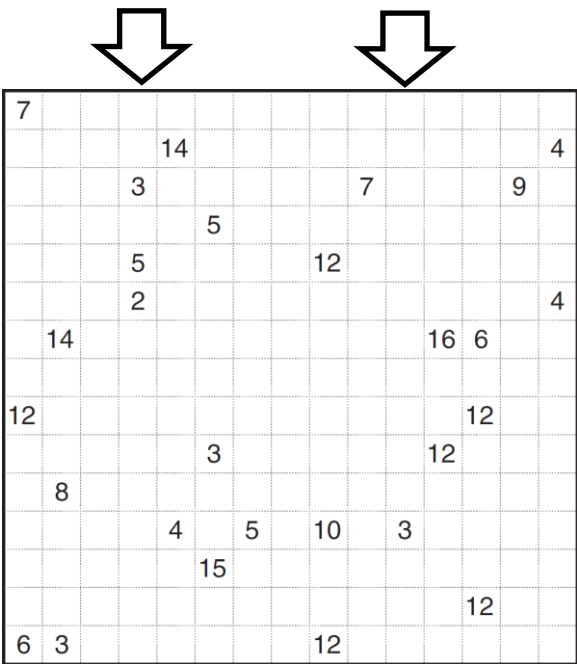


23 Shikaku (Cell Blocks) (15)

Divide the grid into rectangles each containing one of the given numbers. Each rectangle must consist of the number of cells identified by the number that it contains.

Answer Key: Enter the unit digit of the areas of the rectangles in the marked rows/columns, separated by a comma. Note: if the rectangle covers more than one cell in the marked row/column then only enter its size once.

Example: 35522845,4726232

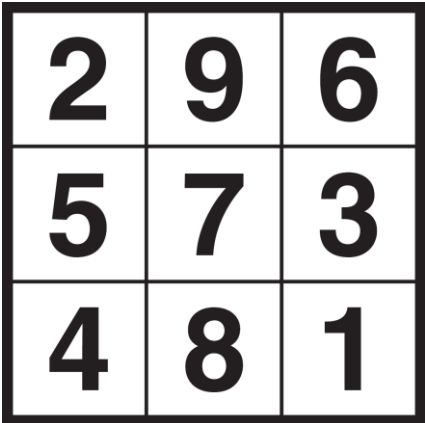
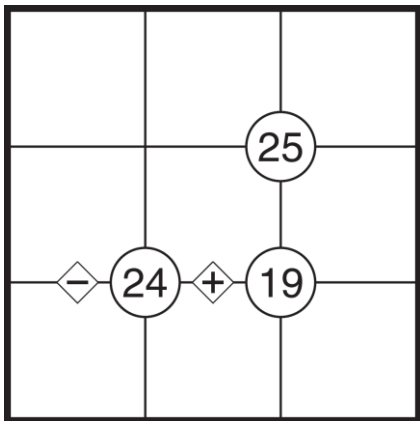


24 Nino (17)

Place each of the numbers 1-9 in the grid. A number in a circle is the sum of the numbers in the four surrounding cells. Inequality symbols indicate that a cell contains a number that is greater than (>) or lower than (<) the number in the adjoining cell. + and – symbols indicate that the number in the cell to the right or below the symbol is one higher (+) or one lower (-) than the number in the adjoining cell. All such instances of + and – are given.

Answer Key: Enter the contents of each row of the grid from top to bottom.

Example: 296573481

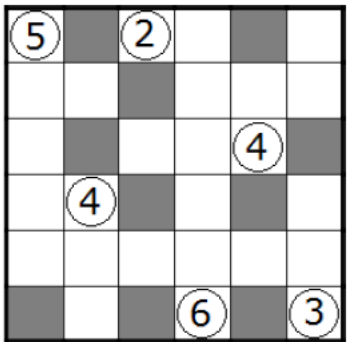
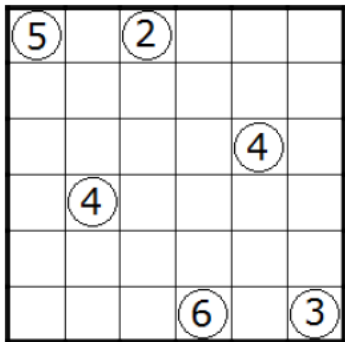


25 Kuromasu (20)

Shade some cells so that the remaining white cells form a single orthogonally connected area. Shaded cells cannot touch each other by a side. Clues in the grid indicate the number of white cells that can be seen from that cell, including the cell itself. Clue cells cannot be shaded.

Answer Key: Enter the number of shaded cells in each row.

Example: 212203

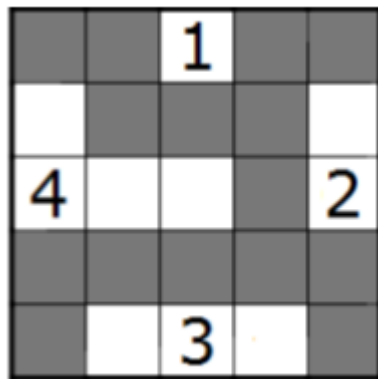
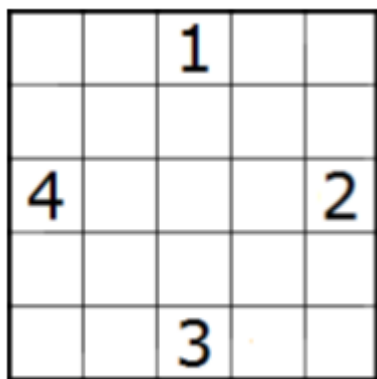


26 Nurikabe (20)

Shade some cells to form a single connected wall. This wall cannot occupy a 2 by 2 area anywhere. Each number in the grid is part of a separate white area, with the number indicating the number of cells in that area. White areas cannot touch each other by a side. Each white area must contain exactly one number.

Answer Key: Enter the length of the longest group of shaded cells in each row.

Example: 23151

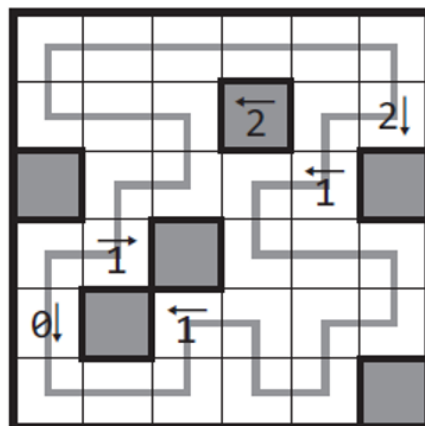
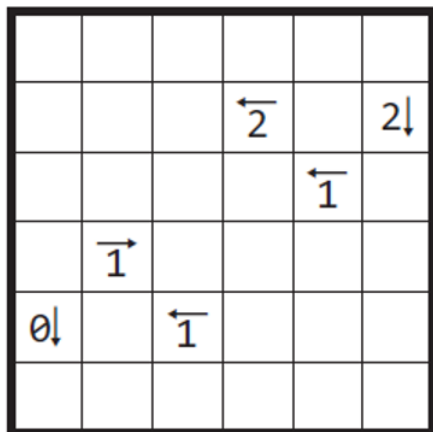


27 Transparent Yajilin (22)

Shade some white cells and draw a closed loop passing through the centre of all remaining white cells connecting the centres of cells horizontally or vertically. Shaded cells cannot share an edge with each other. The loop can pass through clue cells and clue cells that are not passed through must be shaded. Numbered arrows in unshaded cells indicated the total number of shaded cells in the direction pointed at by the arrow. Numbers in shaded clue cells do not necessarily have to be satisfied.

Answer Key: Enter the number of turns the loop makes in each row.

Example: 244444

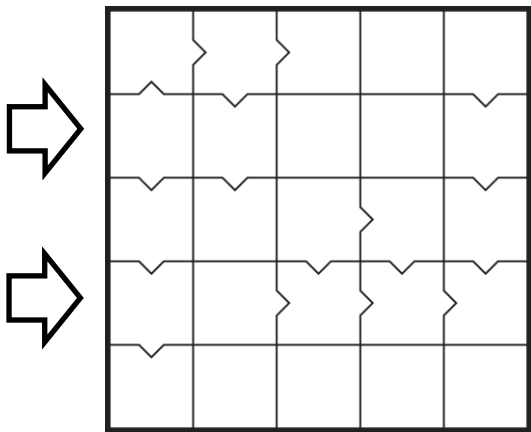


28 Futoshiki (27)

Place the numbers 1 to N (where N is the number of rows/columns) into each row and column so that no number is repeated in a row or column and that all inequality signs (< and >) are obeyed.

Answer Key: Enter the contents of the marked rows/columns, separated by a comma.

Example: 52314,25431



A 5x5 grid for Futoshiki. Two rows are marked with arrows pointing to them from the left. The grid contains several inequality signs: Row 1: > between col 1 and 2, > between col 2 and 3, > between col 3 and 4, > between col 4 and 5. Row 2: < between col 1 and 2, < between col 2 and 3, < between col 3 and 4, < between col 4 and 5. Row 3: < between col 1 and 2, < between col 2 and 3, < between col 3 and 4, < between col 4 and 5. Row 4: < between col 1 and 2, < between col 2 and 3, < between col 3 and 4, < between col 4 and 5. Row 5: < between col 1 and 2, < between col 2 and 3, < between col 3 and 4, < between col 4 and 5.

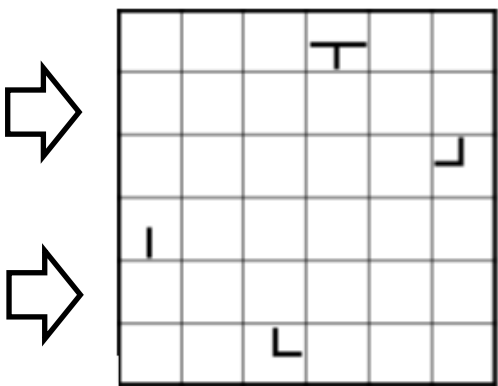
4	3	1	2	5
5	2	3	1	4
3	1	5	4	2
2	5	4	3	1
1	4	2	5	3

29 Pentopia (24)

Place a number of different pentominoes in the grid so that they don't touch each other, even at a point. Rotations and reflections are considered to be the same shape. Clues in the grid indicate the direction of the closest pentomino(es) when looking from that cell. Pentominoes can't cover clue cells.

Answer Key: Enter the contents of the marked rows/columns using the letters of the pentominoes for shaded cells and O for empty cells.

Example: PPOOWW,LLLLOO



A 6x6 grid for Pentopia. Two rows are marked with arrows pointing to them from the left. The grid contains clues: Row 1: T (top) at col 4. Row 2: J (right) at col 6. Row 3: I (left) at col 1. Row 4: L (bottom) at col 4. Row 5: L (bottom) at col 4. Row 6: L (bottom) at col 4.

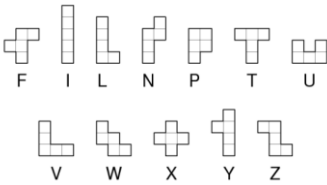
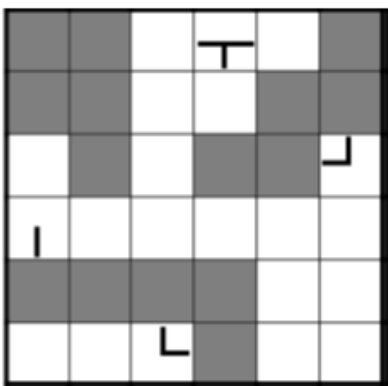


Diagram showing 12 pentomino shapes labeled F, I, L, N, P, T, U, V, W, X, Y, Z.



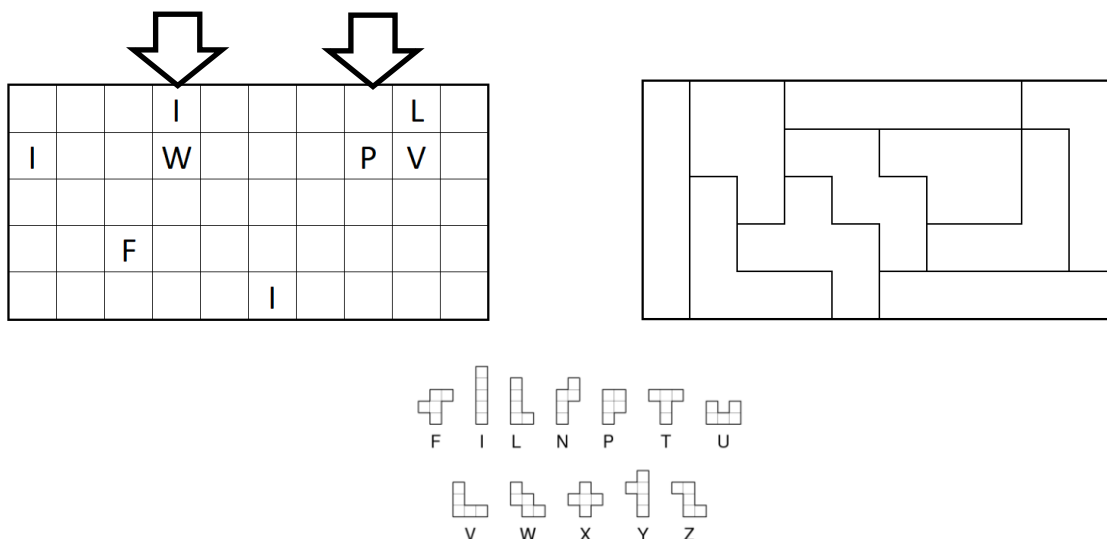
A 6x6 grid showing the solution to the Pentopia puzzle. The grid is filled with pentominoes (shaded cells) and empty cells (unshaded cells). The solution is: Row 1: T (top) at col 4. Row 2: J (right) at col 6. Row 3: I (left) at col 1. Row 4: L (bottom) at col 4. Row 5: L (bottom) at col 4. Row 6: L (bottom) at col 4.

30 Pentomino Division (35)

Divide the grid into 20 pentominoes so that no two pentominoes of the same shape (including rotations and reflections) share an edge. A cell with a letter in it must be part of the pentomino shape associated with that letter. The example uses only F, I, L, P, V and W pentominoes.

Answer Key: Enter the contents of the marked rows/columns, using the pentomino letters.

Example: IWFFV,IPPV

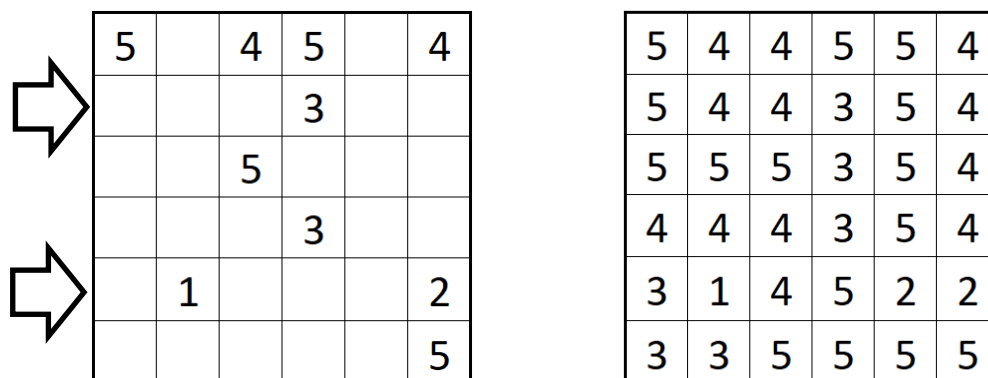


31 Fillomino (Different Shapes) (39)

Divide the grid into different regions so that no two regions with the same area share an edge. Each number must represent the area of the region that it belongs to. A region may contain none, one or more of the given numbers. It is possible for a region not to contain any of the given numbers. In addition, no two regions of the same size can be the same shape (including rotations and reflections).

Answer Key: Enter the contents of the marked rows/columns identifying the area size for each cell. If a region is 10 or more cells in area use the unit digit only, i.e. for 10 enter 0.

Example: 544354,314522

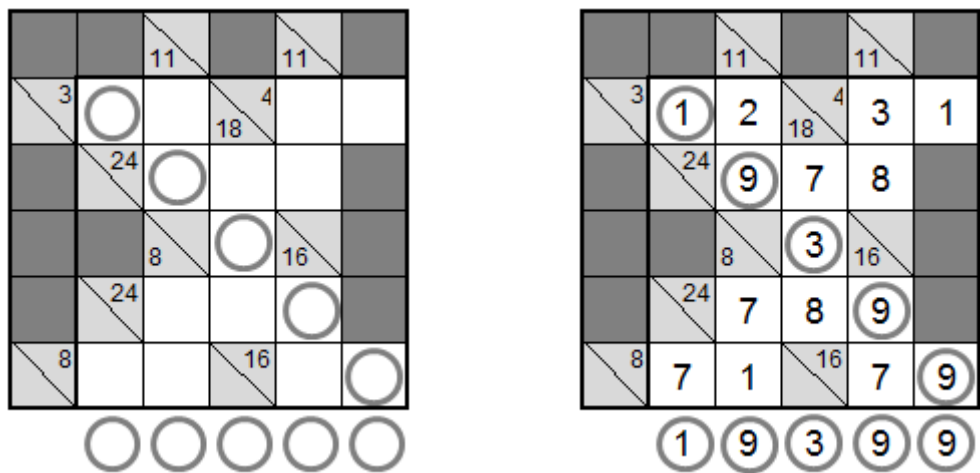


32 Kakuro (33)

Place a number from 1 to 9 into each white cell so that the sum of each horizontal block equals the clue on its left, and the sum of each vertical block equals the clue above it. Note for the puzzle the circles are used only for identifying the answer key.

Answer Key: Enter the value of the numbers in the circled cells from left to right.

Example: 19399

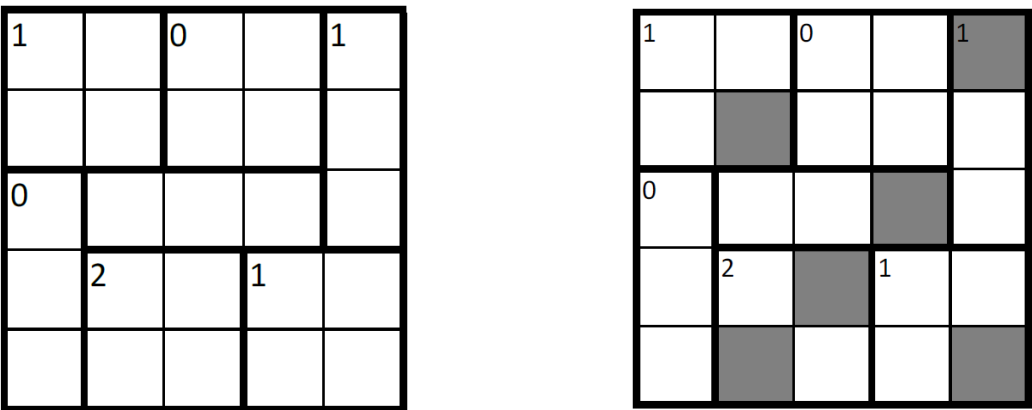


33 Heyawake (20)

Shade some cells to leave a single orthogonally connected unshaded area. Shaded cells cannot touch each other by a side. The unshaded area cannot span over two consecutive bold boundaries in any row or column. Numbers within bold edged regions indicate the number of cells that must be shaded in that region.

Answer Key: Enter the number of shaded cells in each row.

Example: 11112

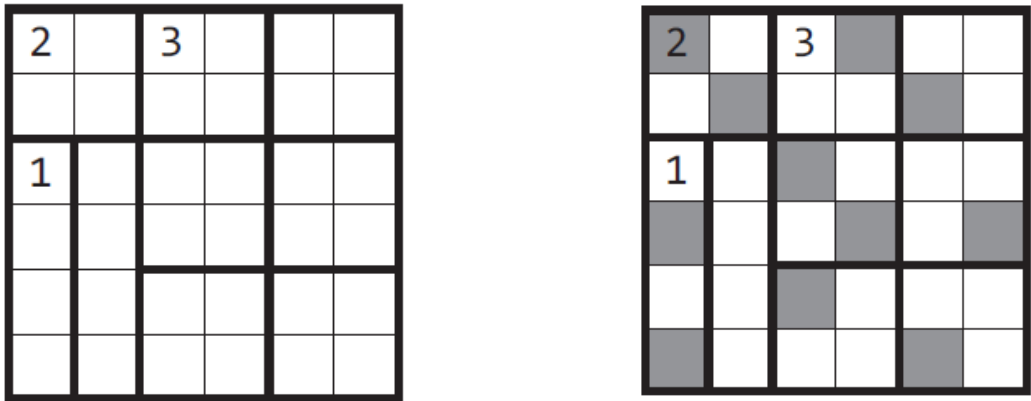


34 Akichiwake (45)

Shade some cells so that they don't touch each other by a side. The remaining unshaded area has to be orthogonally connected. The unshaded area cannot span over two consecutive bold boundaries in any row or column. Numbers indicate the maximum possible connected unshaded area within that region. There need not be an area equal to that value, the only restriction is that there can be no area larger than the value.

Answer Key: Enter the number of shaded cells in each row.

Example: 221312

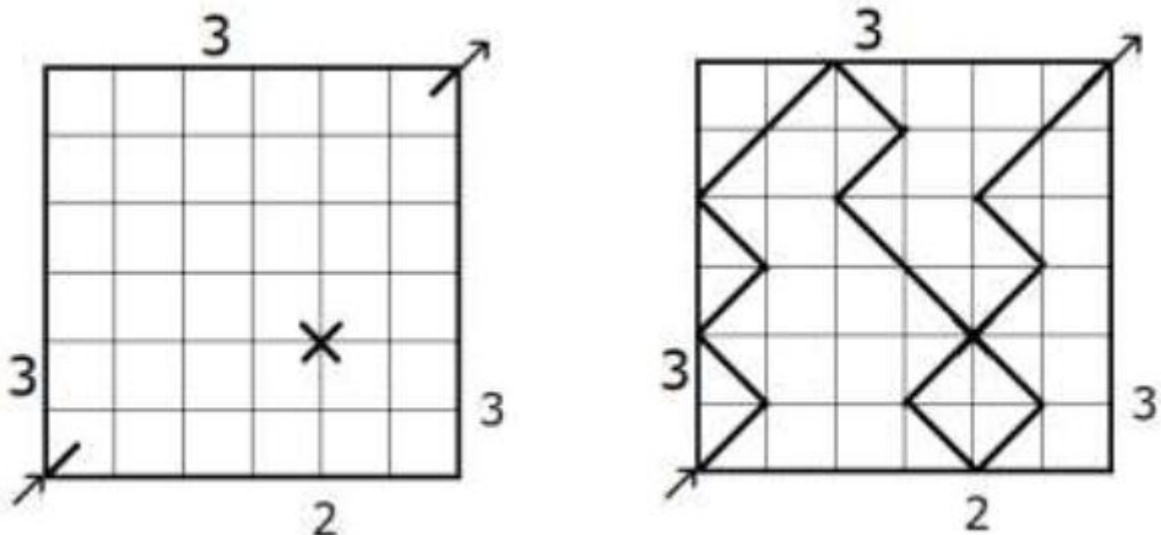


35 Laser (45)

Draw a laser beam in the grid that travels along the main diagonals of cells. The entrance and exit of the beam is marked. Horizontal and vertical mirrors can be placed on the intersections of the grid. If the beam hits a mirror then it is reflected. The beam must meet each mirror just once. The numbers above and to the left of the grid identify how many cells the beam passes in that row/column. The numbers below and to the right of the grid identify how many mirrors are on the corresponding line. The beam must cross itself at places that are already marked (and can only cross at those points).

Answer Key: Enter the number of one cell sections that the beam makes before it is reflected or leaves the grid.

Example: 9



36 Turning Fences (63)

Draw a single closed loop along the edges of the cells. The loop is not allowed to touch or cross itself. Numbers in the grid indicate how many turns the loop takes on the grid points of that cell.

Answer Key: Enter the length of the longest chain of cells inside the loop in every row.

Example: 322652

