

WPF
SUDOKU/PUZZLE
GRAND PRIX
2014

WPF PUZZLE GP 2014 INSTRUCTION **BOOKLET**

ROUND **3**

Puzzle authors:
Japan

青木真一 Shinichi Aoki
稲葉直貴 Naoki Inaba
今井洋輔 Yousuke Imai
岡本広 Ko Okamoto

金子昌弘 Masahiro Kaneko
堅固政斗志 Masatoshi Kengo
酒井美奈子 Minako Sakai
武井大輔 Daisuke Takei

西尾徹也 Tetsuya Nishio
西山ゆかり Yukari Nishiyama
山本達也 Tatsuya Yamamoto

Organised by



WORLD PUZZLE FEDERATION



Submission Page: <http://www.gp.worldpuzzle.org/content/puzzle-gp>

Points:

1	Star Battle	25
2	What's Next?	8+9
3	Number Connection	7
4	Japanese Sums	22
5	Arukone (Numberlink)	6
6	Cross Math	11
7	Japanese Arrows	24
8	Rain Clouds (Radar)	22
9	Islands (Nurikabe)	26
10	Skyscrapers	49
11	Battleships	24
12	Increasing Distances	35
13	Easy as ABC	17
14	Cross Sums (Kakuro)	43
15	Cave	53
16	Snake	70
17	Fences (Slitherlink)	35
18	Afternoon Skyscrapers	42
19	Count Number	41
20	Box of 2 or 3	40

TOTAL: 609



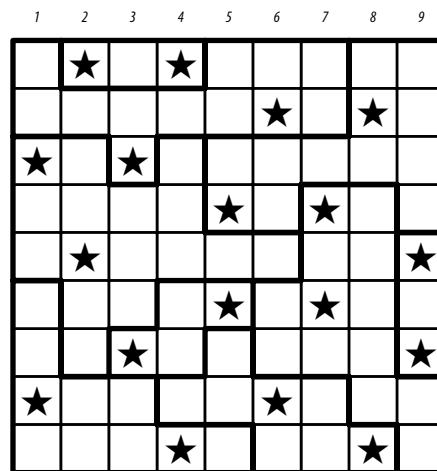
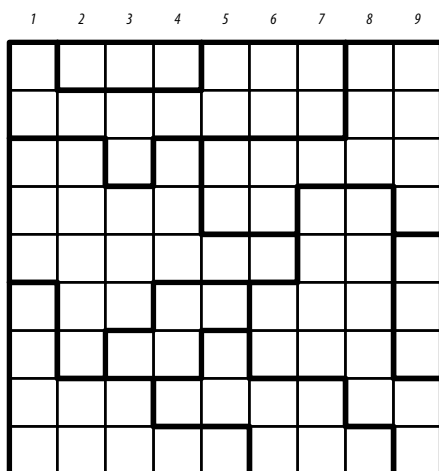
1. Star Battle (25 points) [武井大輔 Daisuke Takei]

Place stars into the grid, so that each row, each column and each outlined region contains exactly two stars. The stars have the size of one cell and must not touch each other, not even diagonally.

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

Answer: Enter the column number of the first star in each row. Use only the last digit for two digit numbers; e.g., use '0' for column 10.

Example Answer: 261525314



2. What's Next? (8+9 points) [稲葉直貴 Naoki Inaba]

Determine the next item in the sequence (replaced with the "??" symbol). The two sequences are not related to each other. Some basic knowledge of English and mathematics *may* be needed. You do not need to solve both sequences to get points.

Answer: Enter the next item in the sequence. You do not need to explain the reason.

Example Answer: 17

2, 3, 5, 7, 11, 13, ??

17 (Prime numbers)



3. Number Connection (7 points) [酒井美奈子 Minako Sakai]

Draw a single continuous path that goes through all the numbered cells in consecutive order. The path must go through orthogonally adjacent cells. Each cell may be visited at most once by the path. (It is permissible for a cell to not be visited by the path.)

The letters in the diagram are for Answer purposes only.

Answer: Enter the letters in the order they appear on the path, with the letter closest (along the path) to the 1 entered first.

Example Answer: EDACB

4				A	
	B			6	
C			2		D
	5				
1		E			3

4				A	
	B			6	
C			2		D
	5				
1		E			3

4. Japanese Sums (22 points) [今井洋輔 Yosuke Imai]

Place a digit from 1 to 9 (1 to 4 in the example) into some cells so that no digit appears more than once in each row or column. Cells may remain empty. Numbers outside the grid indicate the sums of continuous groups of digits (including "sums" of a single digit). These sums are given in the same order as their corresponding groups of digits.

Answer: For each designated row, enter its contents, using 'X' for an empty cell.

Example Answer: X324X, X13XX

		2	7		3	
		7	3	10	8	3
6	4					
→	9					
4	6					
9	1					
→	4					

		2	7		3	
		7	3	10	8	3
6	4	2	4		1	3
→	9		3	2	4	
4	6	4		1	3	2
9	1	3	2	4		1
→	4		1	3		



5. Arukone (Numberlink) (6 points) [金子昌弘 Masahiro Kaneko]

Some cells in the grid are marked with numbers; each number appears exactly twice and no cell contains more than one number. For each pair of identical numbers, draw a path that connects those two numbers. The paths must go through orthogonally adjacent cells. Each cell may be visited by at most one path, and may be visited at most once by that path. (It is permissible for a cell to not be visited by any path.)

The circles in the diagram are for Answer purposes only.

Answer: Enter one digit for each of the circled cells, from left to right. If the path does not go through the cell, enter a single digit '0'. Otherwise, enter the number associated with the path that goes through the cell. Use only the last digit for two digit numbers; e.g., use '0' if the circle is on the path that connects 10 and 10.

Example Answer: 21113

1				3
		2		
		3		
2				1

1				3
		2		
		3		
2				1

6. Cross Math (11 points) [西尾徹也 Tetsuya Nishio]

Fill in the empty cells with the numbers 1 through 9, using each number exactly once, so that 6 correct equations can be read in the rows and columns. Calculations should be done from left to right or from top to bottom (in other words, ignore standard rules of precedence).

Answer: Enter the contents of all nine empty cells, starting with the top row from left to right, then the middle row from left to right, then the bottom row from left to right.

Example Answer: 537428691

	-		×		=	14
×		+		+		
	+		+		=	14
-		+		-		
	+		/		=	15
=		=		=		
14		14		14		

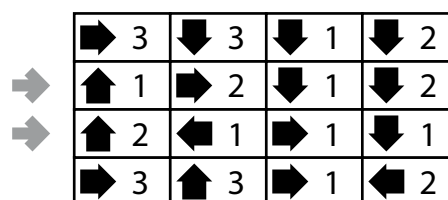
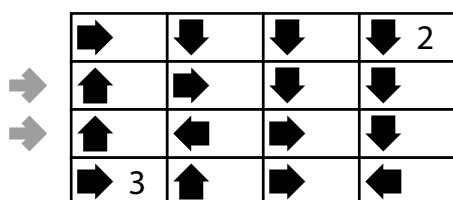
5	-	3	×	7	=	14
×		+		+		
4	+	2	+	8	=	14
-		+		-		
6	+	9	/	1	=	15
=		=		=		
14		14		14		

7. Japanese Arrows (24 points) [堅固政斗志 Masatoshi Kengo]

Put a number in each cell without a number so that the number and arrow in each cell indicates how many different numbers exist in the direction the cell is pointing at (not including itself).

Answer: For each designated row, enter its contents (just the numbers).

Example Answer: 1212, 2111

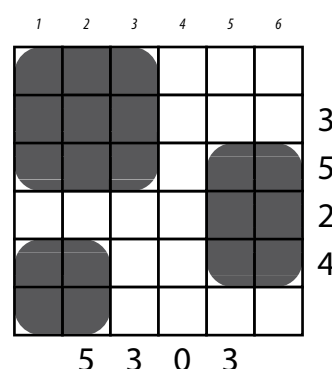
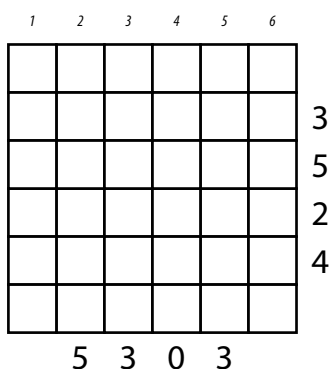

8. Rain Clouds (Radar) (22 points) [稲葉直貴 Naoki Inaba]

Locate some clouds in the grid. Each cloud occupies a rectangular (possibly square) area of cells of at least 2 rows and of at least 2 columns. Clouds do not touch each other, even diagonally. The numbers on the right and bottom edges of the grid reveal the number of cells occupied by cloud segments in that row or column.

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

Answer: Enter the column number of the first cell occupied by a cloud in each row. Use only the last digit for two digit numbers; e.g., use '0' for column 10. If the row is empty, enter '0'.

Example Answer: 111511

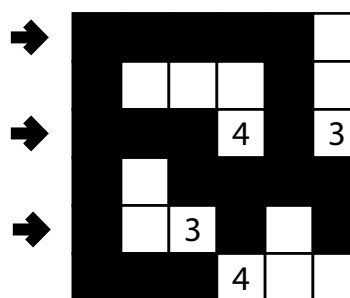
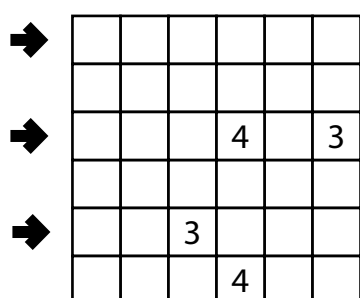



9. Islands (Nurikabe) (26 points) [金子昌弘 Masahiro Kaneko]

Shade some cells black (leaving the other cells white) so that the grid is divided into regions; cells of the same color are considered in the same region if they are adjacent horizontally or vertically. Each given number must be in a white region that has the same area in cells as that number. Each white region must have exactly one given number. All black cells must be in the same region. No 2x2 group of cells can be entirely shaded black.

Answer: For each designated row, enter the length (number of cells) of the black segments from left to right. If there are no black cells in the row, enter a single digit '0'.

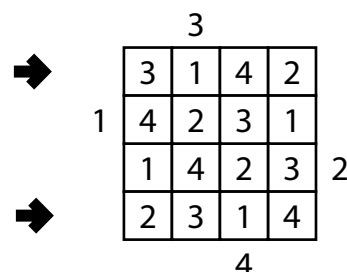
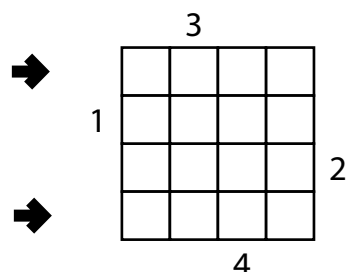
Example Answer: 5, 31, 111


10. Skyscrapers (49 points) [今井洋輔 Yosuke Imai]

Place a digit from 1 to 7 into each cell (1 to 4 in the example), so that each digit appears exactly once in each row and column. The digits represent skyscrapers of different heights; the numbers outside the grid indicate how many skyscrapers can be seen in the respective row or column from the respective direction (smaller skyscrapers are hidden behind higher ones).

Answer: For each designated row, enter its contents.

Example Answer: 3142, 2314



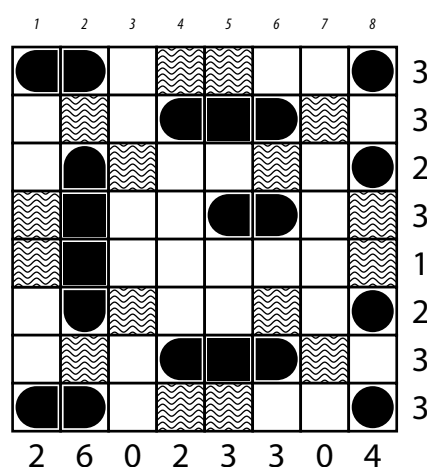
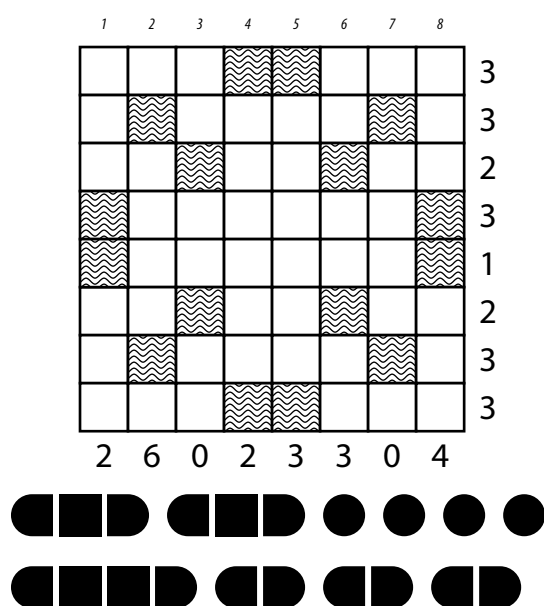
11. Battleships (24 points) [青木真一 Shinichi Aoki]

Locate the indicated fleet in the grid. Each segment of a ship occupies a single cell. Ships can be rotated. Ships do not touch each other, even diagonally. Some ship segments, or sea cells without any ship segments, are given in the grid. The numbers on the right and bottom edges of the grid reveal the number of ship segments in that row or column.

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

Answer: Enter the column number of the first cell occupied by a ship in each row. Use only the last digit for two digit numbers; e.g., use '0' for column 10. If the row is empty, enter '0'.

Example Answer: 14222241

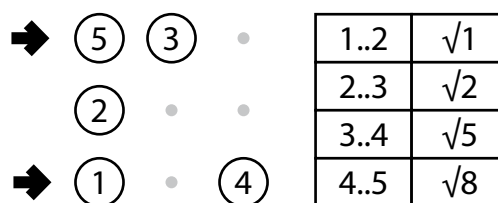
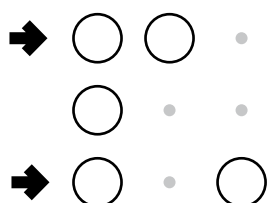


12. Increasing Distances (35 points) [西山ゆかり Yukari Nishiyama]

Fill in each circle with a number from 1 to 14 (1 to 5 in the example) so that no number appears more than once and each circle has exactly one number. Also, the (Euclidean) distance between the centers of the circles labeled 1 and 2 must be smaller than the distance between the centers of the circles labeled 2 and 3, which must be smaller than the distance between the centers of the circles labeled 3 and 4, and so on, with the distance between 13 and 14 being larger than any other distance between consecutively-labeled circles.

Answer: For the indicated rows, enter their contents. Use only the last digit for two digit numbers; e.g., use '0' for the number 10.

Example Answer: 53, 14

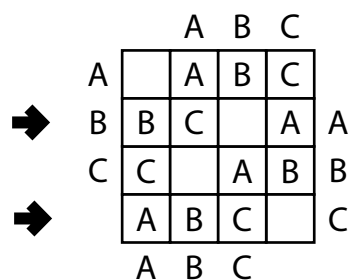
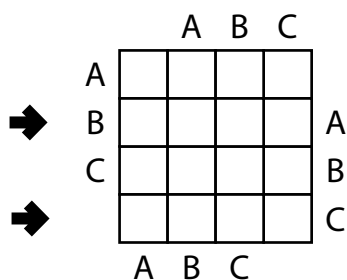



13. Easy as ABC (17 points) [酒井美奈子 Minako Sakai]

Place letters A, B, C in the cells, so that each letter appears exactly once in each row and column. Each cell must have at most one letter, but can be empty. Clues outside the grid indicate the first letter in the respective row or column, seen from that direction.

Answer: For each designated row, enter its contents. Use 'X' to designate an empty cell.

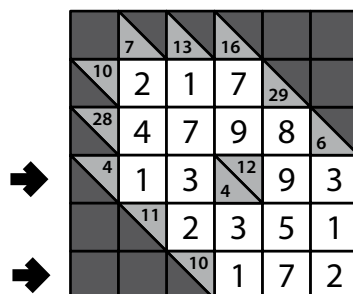
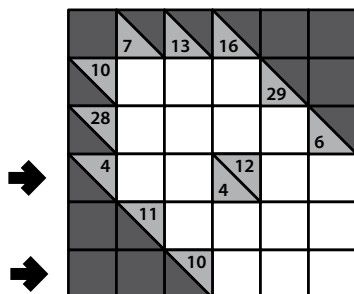
Example Answer: BCXA, ABCX


14. Cross Sums (Kakuro) (43 points) [西山ゆかり Yukari Nishiyama]

Place a digit from 1 to 9 into each white cell. The numbers in grey cells indicate the sum of digits in the adjacent "word" across or down. Digits may not repeat within a "word". The circles in the cells are only used for entering your answer.

Answer: For the indicated rows, enter their contents. (Ignore non-white cells when doing so.)

Example Answer: 1393, 172

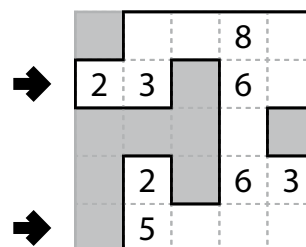
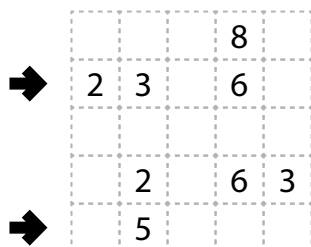


15. Cave (53 points) [堅固政斗志 Masatoshi Kengo]

Shade some cells to leave behind a single connected group — the cave — with no enclosed shaded cells. In other words, all shaded cells must be connected edge-wise by 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 count of cells connected in line vertically and horizontally to the numbered cell *including the cell itself*. (Both the area inside the cave and the areas outside the cave are allowed to have 2×2 sub-areas.)

Answer: For each designated row, enter the length in cells of each of the cave segments (*not the shaded cells outside the cave*) from left to right. Use only the last digit for two digit numbers; e.g., use '0' for a segment of length 10. If there are no cells belonging to the cave in the row, enter a single digit '0'.

Example Answer: 22, 4

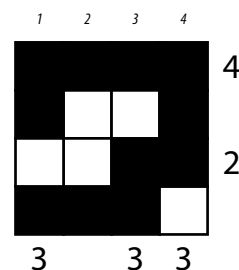
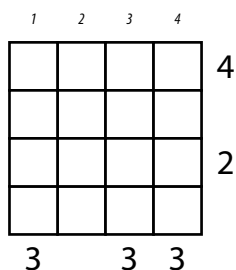

16. Snake (70 points) [山本達也 Tatsuya Yamamoto]

Locate a "snake" in the grid. The snake is a path that starts in a cell, goes through some number of cells orthogonally, and ends in a cell. Each cell is used at most once by the snake. If two cells in the snake touch orthogonally, then they must be exactly one cell apart along the path of the snake, and if two cells in the snake touch diagonally, then they must be exactly two cells apart along the path of the snake. (In other words, the snake may not touch itself, even diagonally.) Numbers outside the grid, if given, indicate how many cells in that row or column are occupied by the snake. **Warning:** Unlike standard Snake puzzles, the ends of the snake are *not* given.

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

Answer: Enter the column number of the first cell occupied by the snake in each row. Use only the last digit for two digit numbers; e.g., use '0' for column 10. If none of the cells in the row are occupied, enter '0'.

Example Answer: 1131

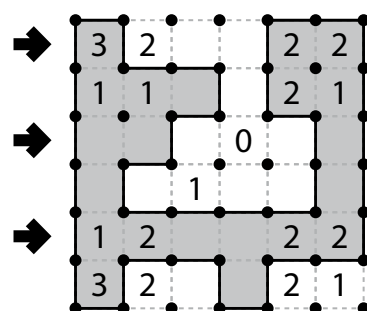
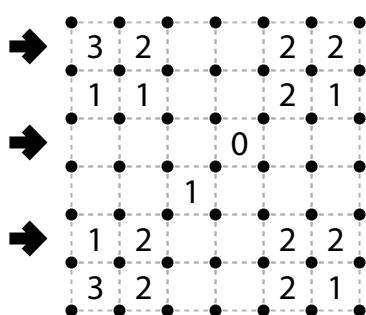



17. Fences (Slitherlink) (35 points) [岡本広 Ko Okamoto]

Draw a single, non-intersecting loop that only consists of horizontal and vertical segments between the dots. Numbers inside a cell indicate how many of the edges of that cell are part of the loop.

Answer: For each designated row, enter the length (number of cells) of each segment inside the loop, from left to right. Use only the last digit for two digit numbers; e.g., use '0' for a segment of length 10. If there are no cells inside the loop for a row, enter the single digit '0'.

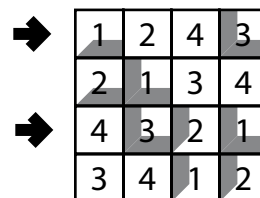
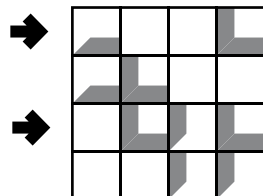
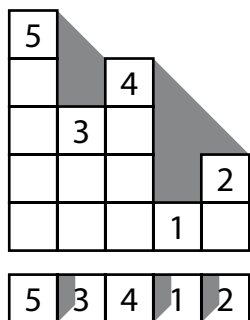
Example Answer: 12, 21, 6


18. Afternoon Skyscrapers (42 points) [青木真一 Shinichi Aoki]

Place a digit from 1 to 7 into each cell (1 to 4 in the example), so that each digit appears exactly once in each row and column. The digits represent skyscrapers of different heights (of unit height equal to the width of a cell). The darkened "shadows" along the left and bottom edges of the cell indicate that the building in that cell is unlit by sunshine when the sun is at the west or at the south, respectively.

Answer: For each designated row, enter its contents.

Example Answer: 1243, 4321

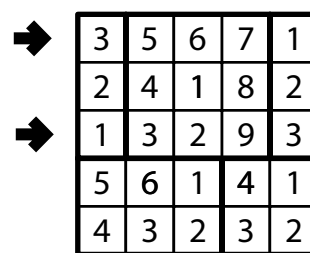
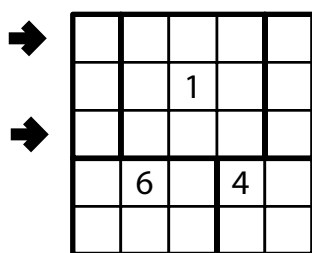


19. Count Number (41 points) [武井大輔 Daisuke Takei]

Place a number into each empty cell so that each cell has exactly one number and cells that contain the same number do not touch each other, not even diagonally. Each outlined area must contain the numbers from 1 to N (where N is the size of the outlined area in cells) such that consecutive numbers within an outlined area are orthogonally adjacent. (In other words, for each region it must be possible to draw a path that starts at 1 and ends at N, going through each other cell exactly once and in numerically increasing order.)

Answer: For each designated row, enter its contents.

Example Answer: 35671, 13293


20. Box of 2 or 3 (40 points) [山本達也 Tatsuya Yamamoto]

Draw some "boxes" (not necessarily rectangular) around the dots so that each box contains exactly 2 or 3 dots. No dot may be in more than one box (but some dots might be in zero boxes). Each black dot must be in a box. Each white dot may be in a box, but does not have to be. All dots within a box must be connected to each other via line segments *within* the box, either directly or indirectly. Line segments that connect dots (of any color) belonging to two *different* boxes must connect boxes of different sizes (that is, a size-2 box and a size-3 box).

Answer: For each designated row, enter (from left to right) whether each dot is in a size-2 box, size-3 box, or not in a box. Enter '2' for a size-2 box, '3' for a size-3 box, and '1' for a dot not in a box.

Example Answer: 1323, 2333

