



WPF
SUDOKU/PUZZLE
GRAND PRIX
2014

WPF PUZZLE GP 2014 COMPETITION **BOOKLET**

ROUND **5**

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James McGowan, Adam Dewbery

Organised by


WORLD PUZZLE FEDERATION



Note: For Puzzles 2, 8, and 13, we will accept inverse answer keys, where Xs and Os are swapped. For example, if the correct answer key is 'XXXXOXO', then 'OOOOXOX' will also be judged as correct.

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

Points:

1	Fillomino	13
2	Thermometers	24
3	Domino Search	22
4	Tapa	24
5	Akari	14
6	Masyu	33
7	LITSO	45
8	Pentomino Areas	45
9	Yajilin	77
10	Star Battle	24
11	Skyscraper Sums	31
12	Unknown Japanese Sums	118
13	Crystal Mine	38
14	Worm Farm (Count Number)	37
15	Word Cobweb	48

TOTAL: 593



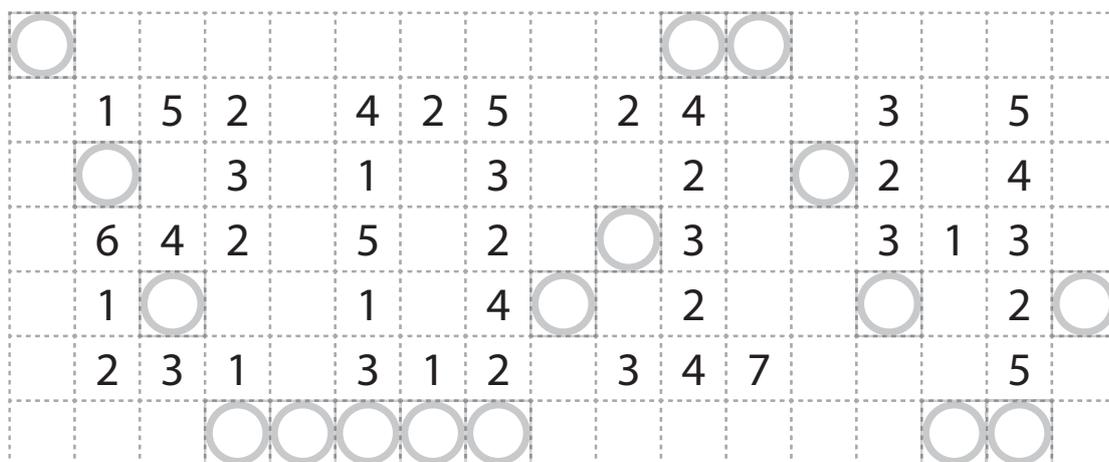
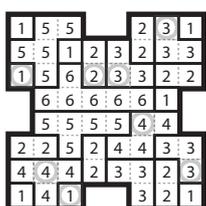
1. Fillomino (13 points) [Adam Dewbery]

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 represent 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, with an area of a value not present in the starting grid, such as a 6 in a puzzle with only clues numbered 1-5.)

The circled cells are only used for entering your answers.

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

Example Answer: 14123433

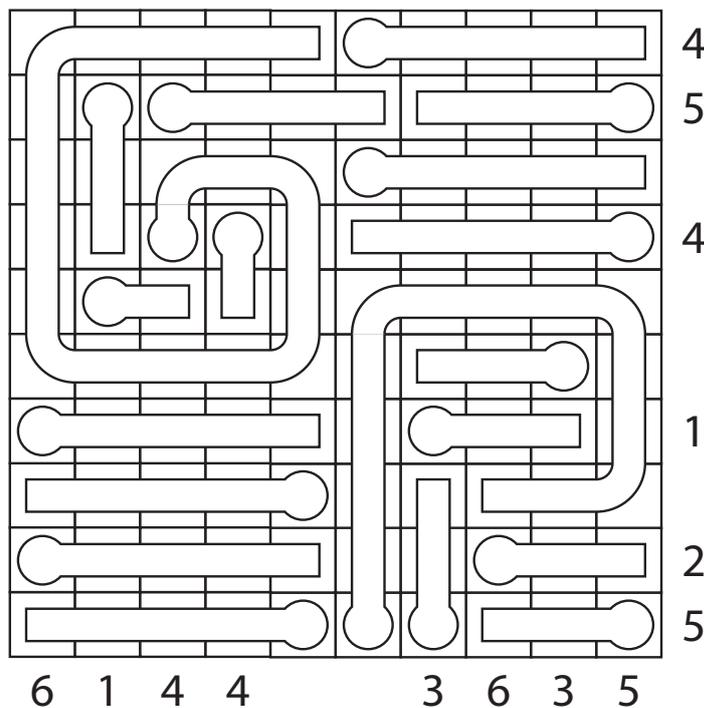
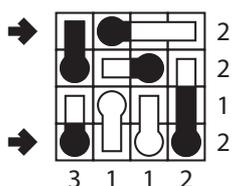


2. Thermometers (24 points) [Adam Dewbery]

Some thermometers are given in the grid. For each thermometer, shade in some number (zero is permitted) of consecutive cells of that thermometer, starting at the round bulb and continuing towards the other end of the thermometer. Numbers below and to the right of the grid indicate the number of shaded cells in that column or row.

Answer: For each designated row, enter its contents, using X for a shaded cell and O for an unshaded cell.

Example Answer: XXOO, XOOX





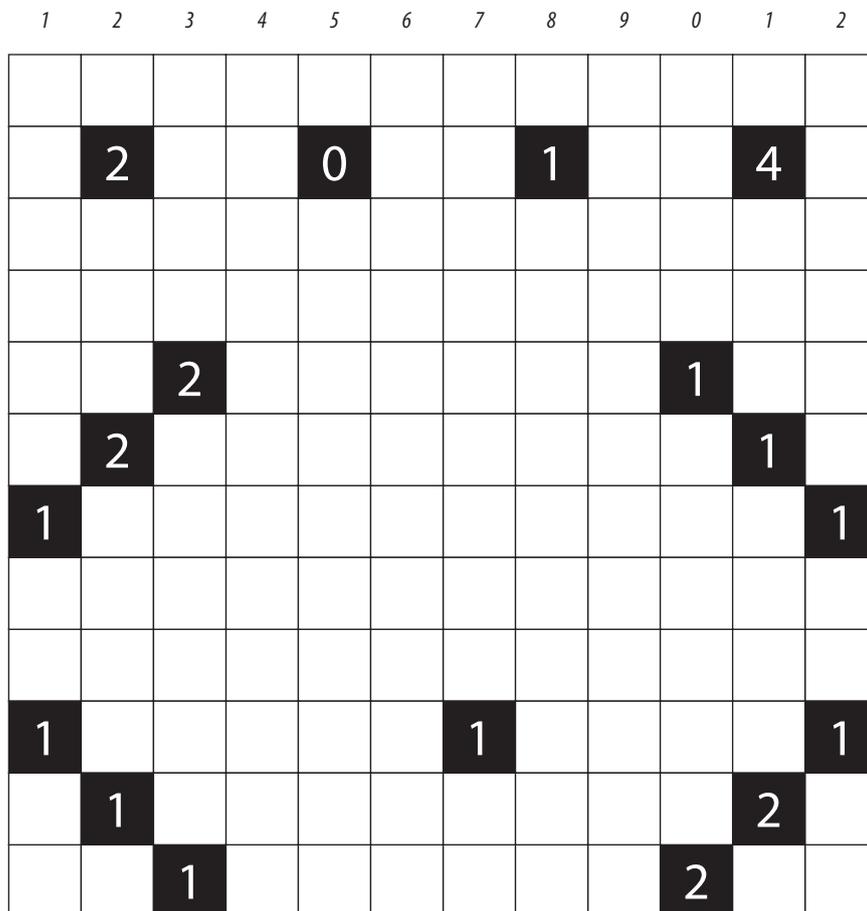
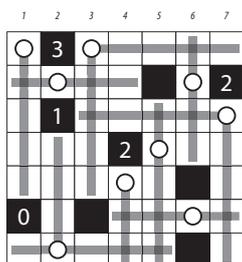
5. Akari (14 points) [James McGowan]

Place bulbs in some white cells so that every white cell either contains a bulb or is "lit up" by at least one bulb. A bulb "lights up" cells along the four orthogonal directions until blocked by a black cell. No two bulbs may light up each other. A digit in a black cell indicates the number of bulbs that should be orthogonally adjacent to that cell.

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

Answer: Enter the column number of the left-most bulb 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 a row have a bulb, enter '0' for that row.

Example Answer: 1275462

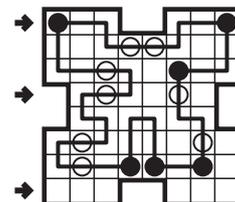




6. Masyu (33 points) [James McGowan]

Draw a single, non-intersecting loop that passes through all circled cells. The loop must go straight through the cells with white circles, with a turn in at least one of the cells immediately before/after each white circle. The loop must make a turn in all the black circles, but must go straight in both cells immediately before/after each black circle.

Answer: For each designated row, enter the length in cells of the horizontal loop segments from left to right. (Do *not* enter anything for vertical-only segments in those rows.) Use only the last digit for two digit numbers; e.g., use '0' for a segment of length 10. If the loop only has vertical segments in the marked row, enter a single digit '0'.



Example Answer: 22, 2, 0

		○			○			○			●	
			●			○			●			
6a →		○			●			○				○
	○		●			○		○			●	○
6b →				○					○			
	●		●			●		○			○	○
	○		○		○		○	●		○	○	
6c →												
	○		●		●		○	●		●		○
	○			●			○			●		
6d →		○			○			○			●	
		●				○			○			●

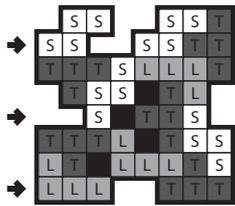


7. LITSO (45 points) [James McGowan]

Divide the grid into tetrominos so that two identical tetrominos never share an edge (but may touch diagonally). Tetrominos that are rotations/reflections of each other are considered identical.

Answer: For each designated row, enter the shape of the tetromino each cell belongs to, from left to right. If multiple cells in a row belong to the same tetromino, enter all of them separately. Use the standard mapping "LITSO" for the tetromino shapes.

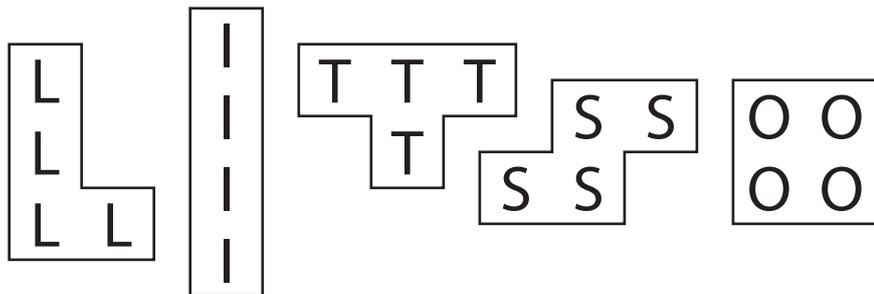
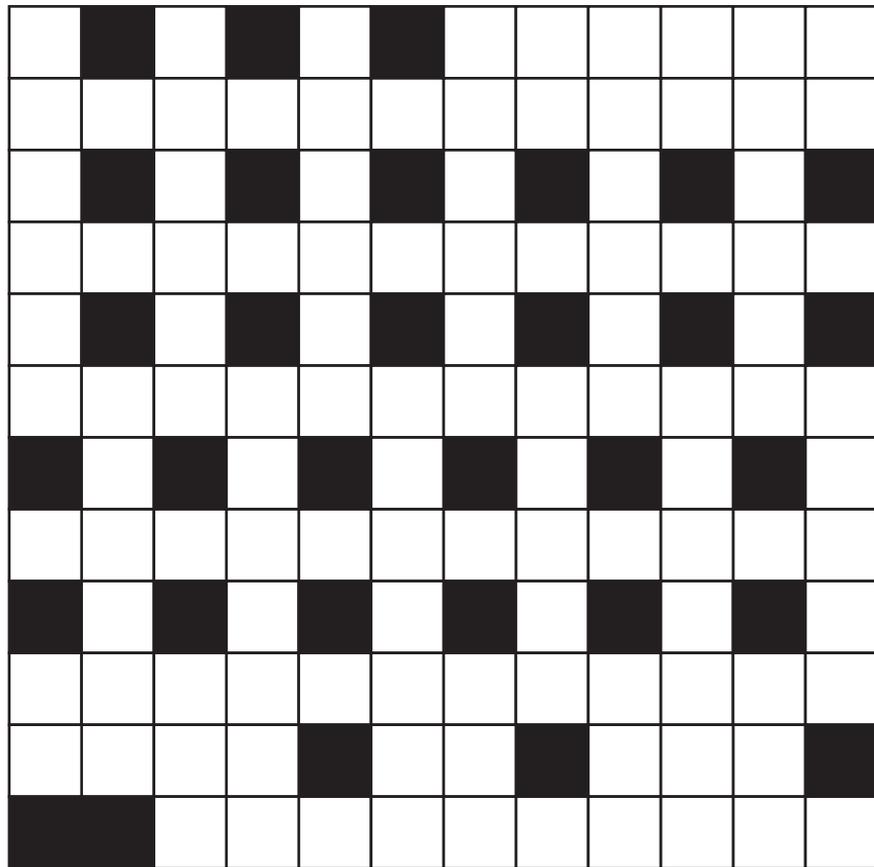
Example Answer: SSSSTT, STTS, LLLTTT



7a →

7b →

7c →



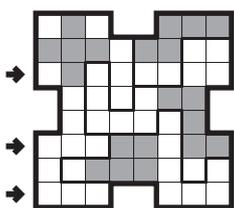


8. Pentomino Areas (45 points) [James McGowan]

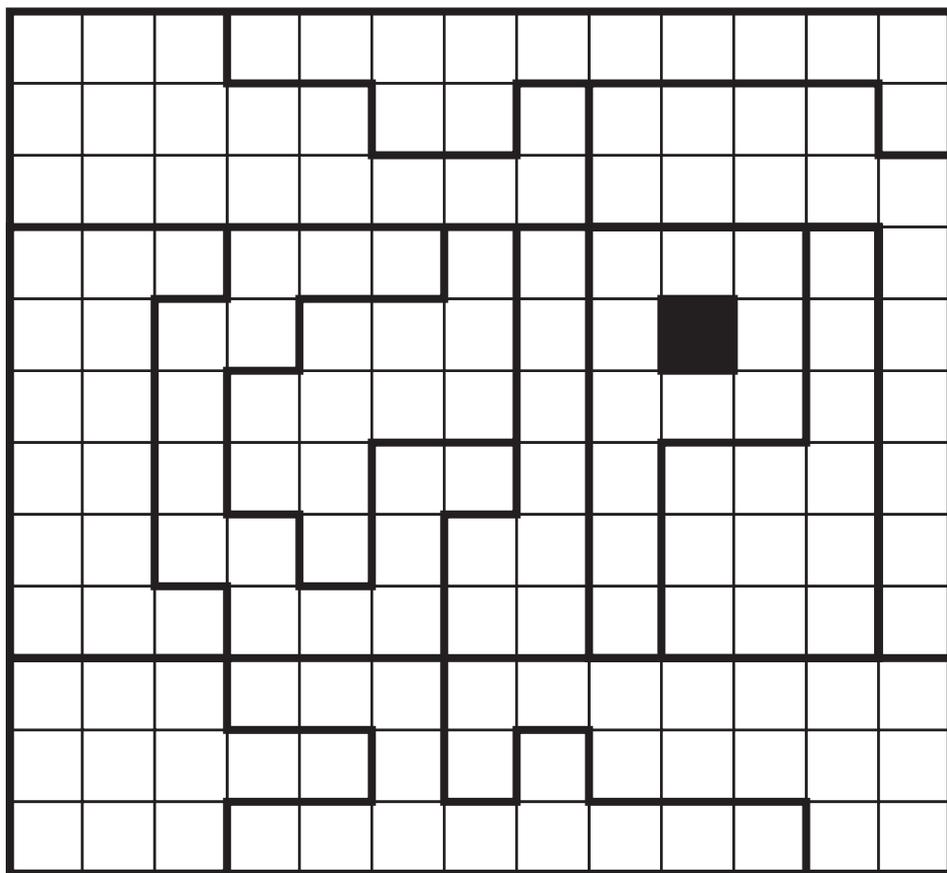
Place the twelve given pentominoes (four in the example) into the grid so that they do not touch each other, not even diagonally. Each outlined region contains exactly one pentomino, and no pentomino is in more than one region. Pentominoes can be rotated and reflected. *Note:* The competition puzzle has a hole (a single marked cell that is not part of any region).

Answer: For each designated row, enter its contents, using X for a cell with a pentomino piece and O for a cell without any pentomino piece.

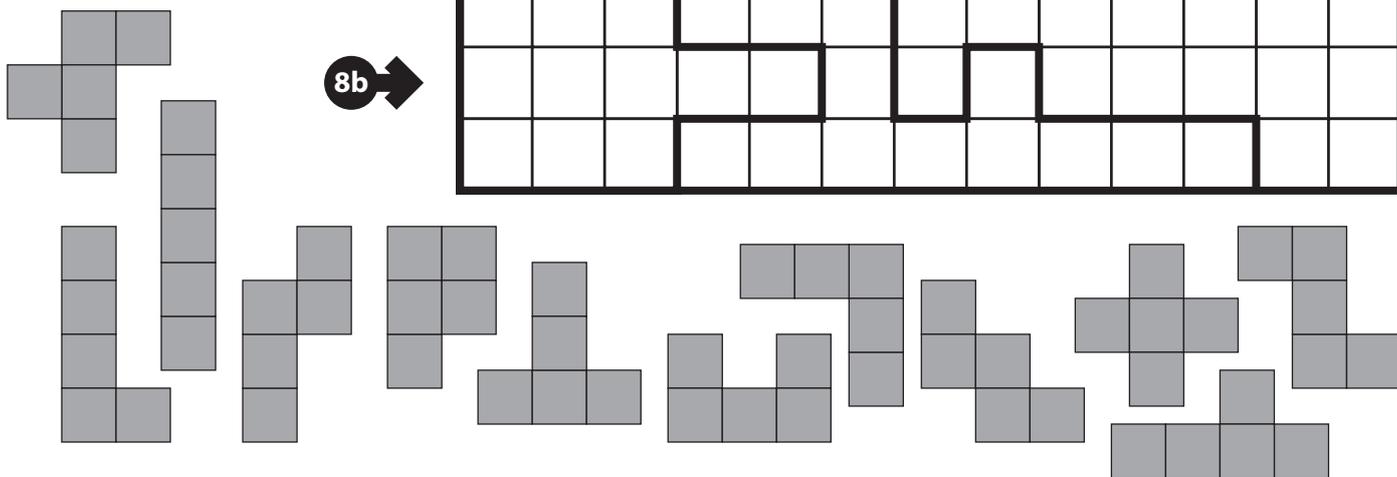
Example Answer: 0X000000, 000XX0XX, 000000



8a →



8b →





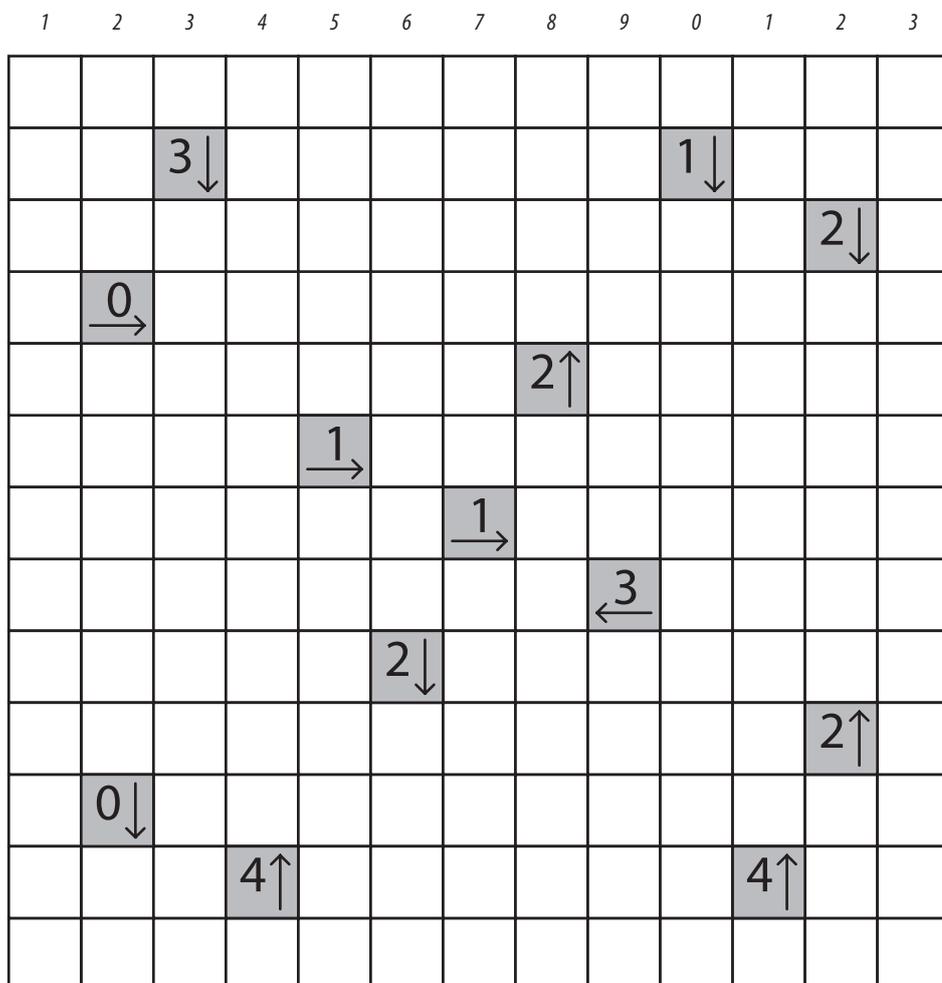
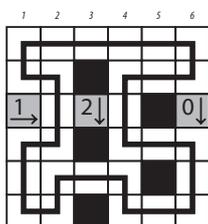
9. Yajilin (77 points) [James McGowan]

Blacken some white cells and then draw a single closed loop (without intersections or crossings) through all remaining white cells. Loop paths must be orthogonal. Blackened cells cannot share an edge with each other. Some cells are outlined and in gray and cannot be part of the loop. Numbered arrows in such cells indicate the total number of blackened cells that exist in that direction in the grid.

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

Answer: Enter the column number of the left-most blackened cell in each row. (Outlined gray cells are not blackened.) Use only the last digit for two digit numbers; e.g., use '0' for column 10. If none of the cells in a row are blackened, enter '0' for that row.

Example Answer: 035353





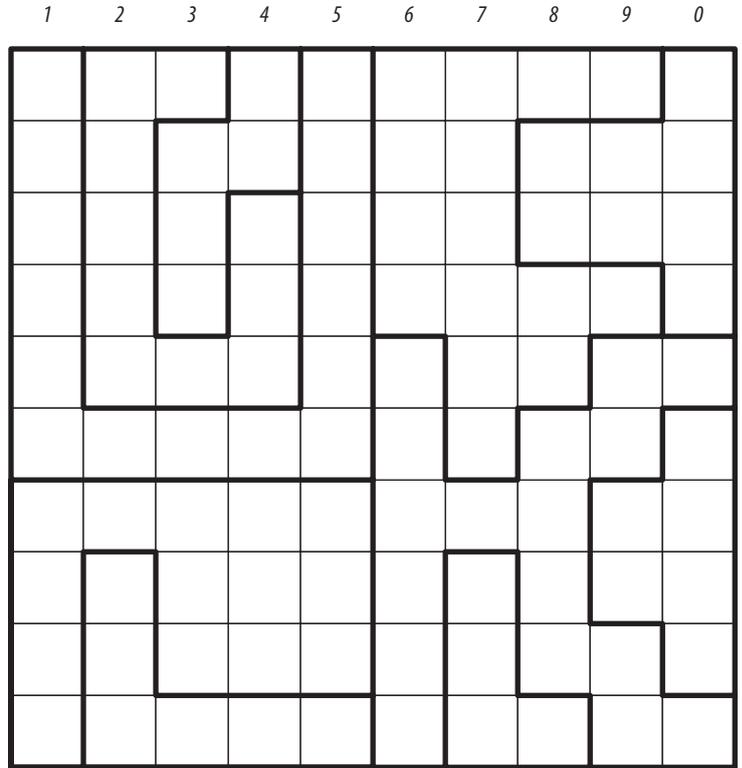
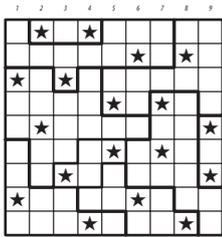
10. Star Battle (24 points) [Adam Dewbery]

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 left-most star in each row. Use only the last digit for two digit numbers; e.g., use '0' for column 10.

Example Answer: 261525314

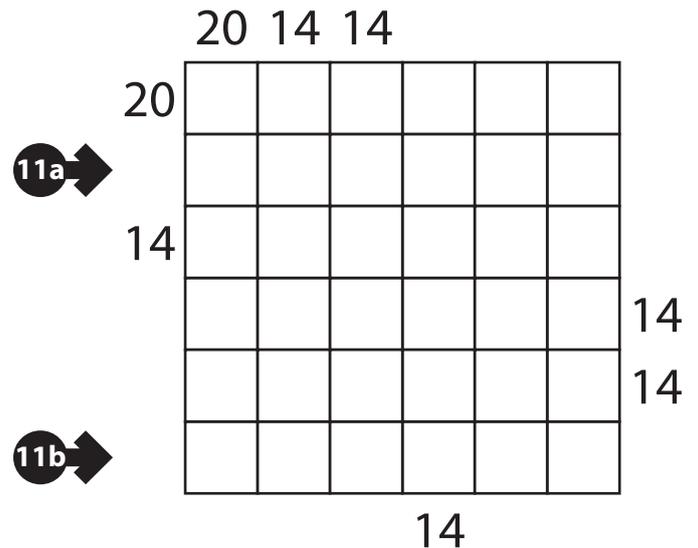
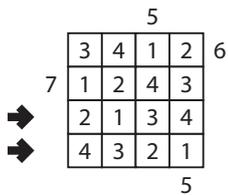


11. Skyscraper Sums (31 points) [James McGowan]

Place a digit from 1 to 6 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 the sum of the heights of the skyscrapers that 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 (not including any numbers outside the grid).

Example Answer: 2134, 4321



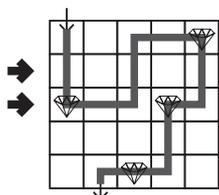


13. Crystal Mine (38 points) [James McGowan]

Some cells in the grid contain a crystal. Draw a path from the entrance arrow to the exit arrow, travelling orthogonally through the centers of the cells. The path must travel through every cell with a crystal, but must not visit all four cells of any 2x2 subsquare in the grid.

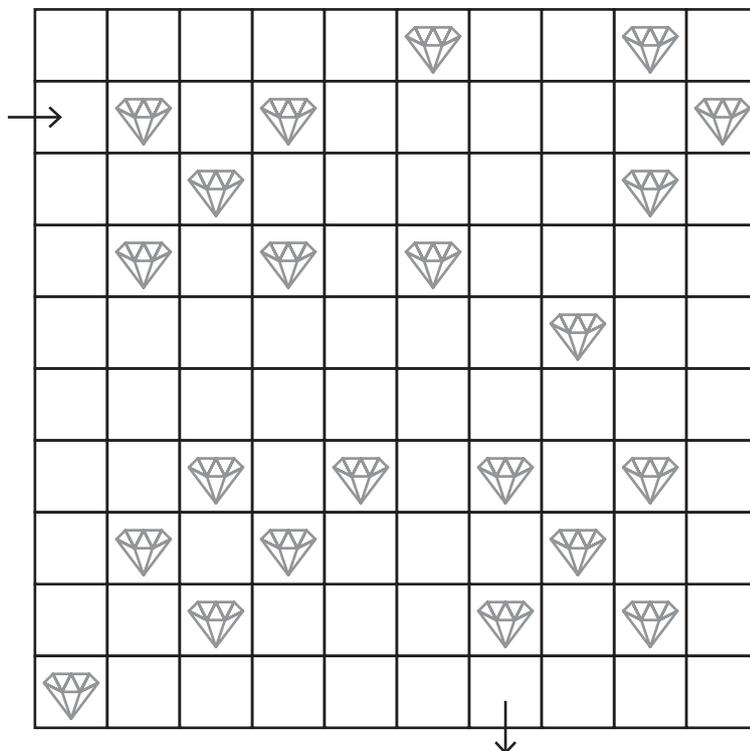
Answer: For each designated row, enter its contents, using O for a cell used by the path (including cells with crystals) and X for a cell not used by the path.

Example Answer: OXOXO, OOOOO



13a →

13b →

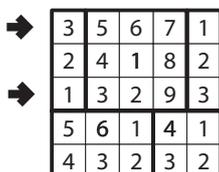


14. Worm Farm (Count Number) (37 points) [James McGowan]

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.)

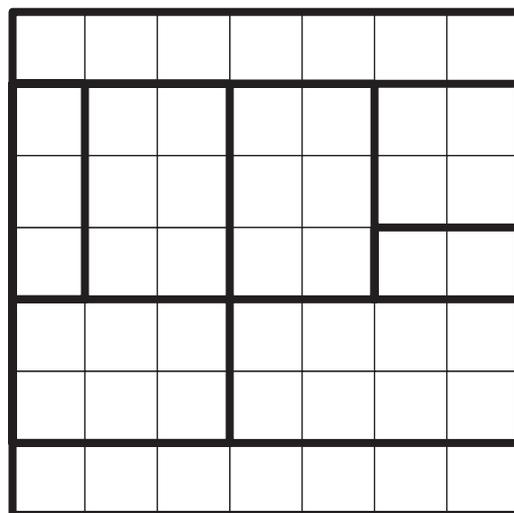
Answer: For each designated row, enter its contents.

Example Answer: 35671, 13293



14a →

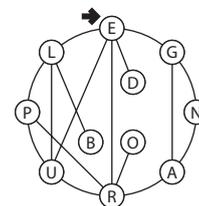
14b →





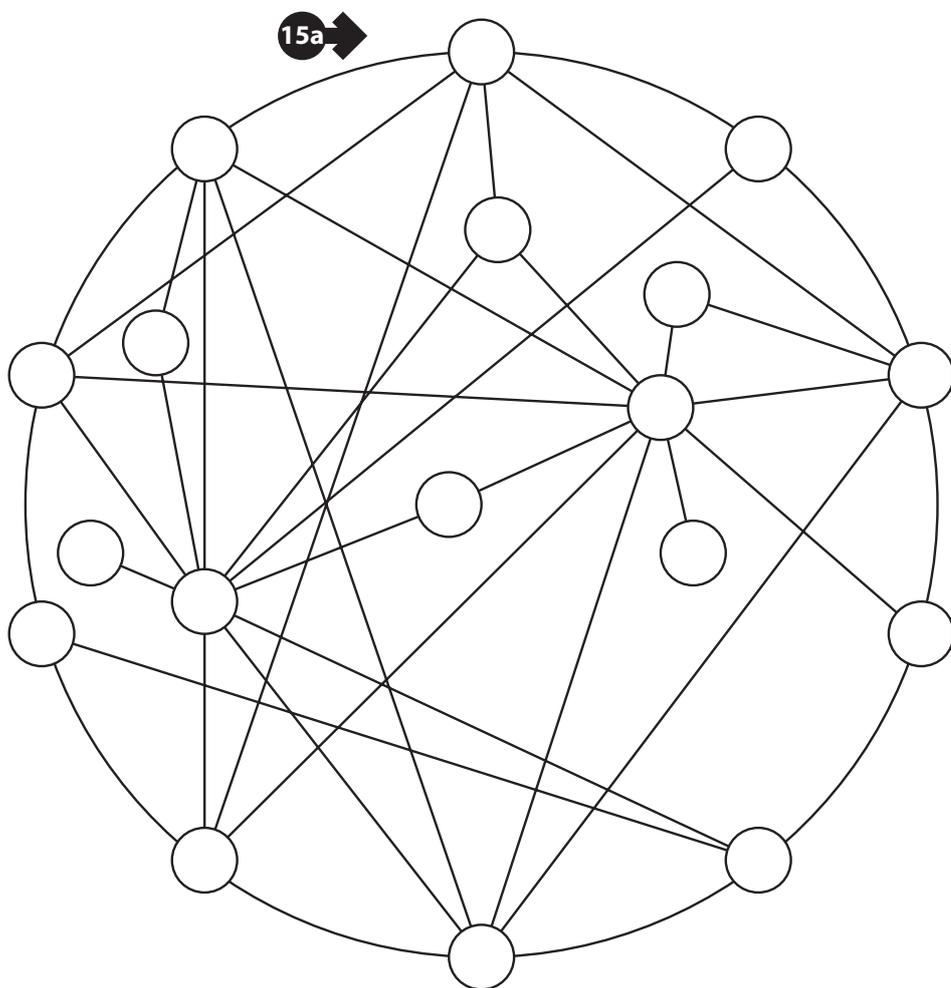
15. Word Cobweb (48 points) [James McGowan]

Place a letter into every cell so that every word in the provided word list can be spelled by travelling from cell to cell along the designated paths. Every cell should have a different letter and the list of all letters is provided. A word may reuse a path as many times as is necessary. It is possible for some paths to not be used by any word. (The word list will not contain any words with doubled letters, such as "GREEN.")



Answer: Starting at the top-most cell, enter the letters in the outside ring of cells, in clockwise order.

Example Answer: EGNARUPL



- ARTHUR
- AVALON
- CAMELOT
- EXCALIBUR
- GALAHAD
- GUINEVERE
- LANCELOT
- MERLIN
- PERCIVAL

A B C D E G H I L M N O P R T U V X