

11th World Sudoku Puzzle Championship

Senec - Slovak Republic / 16. 10. - 23. 10. 2016

World Puzzle Championship INSTRUCTION BOOKLET

Thursday, 20th October

Round 1 – SLOVAKIA	25 minutes	09:00 – 09:25	300 points
Round 2 – MISCELLANEOUS	90 minutes	09:40 – 11:10	1100 points
Round 3 – KROPKI	60 minutes	11:30 – 12:30	750 points
Round 4 – FULL CLASSICS	35 minutes	14:10 – 14:45	430 points
Round 5 – FINEST COLLECTION	60 minutes	15:00 – 16:00	720 points
Round 6 – SUPERPOSITIONS	25 minutes	16:15 – 16:40	300 points
Round 7 – OUTSIDE THE BOX	30 minutes	17:00 – 17:30	360 points
Round 8 – OLDISH STYLE	45 minutes	17:45 – 18:30	650 points

Friday, 21st October

Round 9 – CLASSICS	100 minutes	09:00 – 10:40	1200 points
Round 10 – MYOPIA	35 minutes	11:00 – 11:35	350 points
Round 11 – NEWISH STYLE	45 minutes	11:50 – 12:35	650 points
Round 12 – ASSORTED	75 minutes	14:10 – 15:25	900 points
Round 13 – IRREGULAR CLASSICS	40 minutes	15:40 – 16:20	500 points
Round 14 – Team – PERPLEXITY	30 minutes	17:00 – 17:30	1400 points
Round 15 – Team – TOROIDAL	50 minutes	17:40 – 18:30	2000 points

Saturday, 22nd October

Round 16 – Team – STICKERS	30 minutes	09:00 – 09:30	1200 points
Round 17 – Team – PENTOMINOES	30 minutes	09:45 – 10:15	1500 points
TEAM PLAY-OFF		11:00 – 12:30	
PLAY-OFF		14:00 – 16:30	

Organized by:



SZHK
slovenský zväz hádankárov a krížovkárov

WORLD PUZZLE FEDERATION

Competition Rules

Scoring and Bonuses

Points will be awarded only for fully and correctly solved puzzles. In general, there is no partial credit unless it is stated otherwise in the round's description.

Individual Rounds

A bonus of 10 points for each full remaining minute will be awarded to any competitor who correctly solves each puzzle in a round. At the judge's discretion, 0.75 x bonus (rounded to a whole number) will be awarded in the case of a single minor mistake in no more than 1 puzzle. For the avoidance of doubt, a minor mistake is considered at most two incorrectly filled cells in at most one of the puzzles.

Team Rounds

A bonus of 40 points for each full remaining minute will be awarded to any team who correctly solves all the puzzles in a round. If there are any mistakes, then no bonus will be awarded.

Competition Hall Rules

1. Each competitor has to sit at his/her pre-allocated desk in individual rounds. Teams have to work at their pre-allocated desks/areas for team rounds.
2. Prior to the start of each round, competitors must ensure they are at their desks ready for the start of the round. Late arrivals may not be permitted to enter the competition hall to take part in a round (at the discretion of the organizers).
3. Prior to the start of each round, competitors have to clearly write their name, team and reference number on the front of their competition booklet into the allocated space. If this information is not complete, then the organizers reserve the right not to award any points to that competitor for that round. Competitors must not open their booklets before the official start of the round.
4. When the signal for the start of the round has been given, competitors may open their booklets and begin solving the puzzles.
5. During each individual round, competitors have to keep silent, unless declaring completion of a round.
6. During team rounds, team members may talk to each other, but should do this with respect to other teams.
7. To declare a round complete, a competitor must close his/her booklet, clearly state "finished" and raise his/her arm with the booklet. The competitor's arm must be raised until the booklet is collected. The same rules apply for the team competition.
8. Competitors or teams who complete a round with more than five minutes in advance, are allowed to leave the competition hall quietly.
9. Competitors or teams who complete a round with five minutes or less left are not allowed to leave their desks or tables in order to not to cause unnecessary disruption to fellow competitors.
10. When a competitor leaves the competition hall for any reason, he/she will be not allowed to continue in that round.
11. When the signal to finish round is given, competitors have to stop solving immediately, close their booklets, put their pens/pencils down and their hands up with their booklets for collecting.

12. At the end of a round, competitors have to remain seated until all booklets have been collected. The signal to get up and leave will be given by the supervisor.
13. Mobile phones and electronic devices are not permitted to use in the competition hall. The devices have to be turned off and must not be placed on the competitor's desk.
14. Only team captains and official observers equipped with a name tag are allowed to enter the competition hall while either individual or team rounds are taking place. Other non-competing participants may enter the competition hall at the discretion of the organizers.
15. Competitors may not use cameras or other recording devices during rounds. Only official observers may do so, at the discretion of the organizers. They have to respect the competitors and not use flash photography or cameras with excessive sounds.
16. When a competitor believes that there is a problem with a puzzle, they must clearly state that puzzle is wrong by writing "Wrong puzzle" next to it. The competitor must not notify the organizers during the round. This will be investigated upon completion of the round.
17. Puzzles can be completed in any order within a round. The points' value of a puzzle is an indication of its expected difficulty, although individual solving experience may differ. The difficulty of an example puzzle does not necessarily reflect the difficulty of the corresponding competition puzzle.
18. The boxed area above each puzzle is reserved for makers' notes – competitors must not write in this area.

Permitted Items

19. Permitted items which can be used in the competition hall (unless stated otherwise) are: pens, pencils, pencil sharpeners, erasers, rulers, blank papers and instruction booklets annotated with notes regarding puzzle instructions and preparation notes.
20. Drinks and snacks are permitted as long as they do not disturb other competitors with a strong smell or rustling packet.
21. It is strictly forbidden to use electronic devices such as music players and headphones or any type of calculator. Use of such equipment may lead to the disqualification of the competitor.
22. Any other items brought into the hall must be kept in a bag on the floor and placed under the competitor's desk, so as not to block the aisles.

Marking and Queries

23. When a round has been evaluated, fully marked booklets are returned to a team member equipped with a country tag at a given location in a given time. Country tags will be distributed to each captain prior the start of the championships.
24. In case of any query after a booklet has been evaluated and returned to a competitor, the query must be raised through a team member with country tag to the organizers in the specified time. The schedule for the queries will be published before the competition. The booklet should be left with the organizers for investigation.
25. Puzzles may be photographed during the marking phase in order to prevent subsequent interventions.
26. Team captains are responsible for ensuring that any information given to them related to the competition is effectively relayed to their team.
27. For each puzzle, the instructions must be followed precisely to be awarded the points for the puzzle. Unless explicitly stated otherwise, the solutions incompatible with the rules will be considered incorrect. The list of exceptions may be released before each of the rounds.

Breach of Rules

28. Any breach of these rules may lead to a competitor or team being disqualified from the round or competition.

29. The decision of the tournament director (Matej Uher) is final.

Final Remarks

30. In case of a major mistake in one of the rounds, organisers reserve the right to cancel the round, either by removing it from the time schedule, or by not rewarding any points for it to any of the competitors.

31. The official puzzle booklets will contain 1-4 puzzles per page in the individual rounds. The rules of the puzzle and the corresponding points are always written next to it.

32. The official puzzle booklets will not always contain puzzle examples. Therefore, we recommend to bring the Instruction Booklet, which contains an example of every puzzle which will be part of the championship.

33. In the team rounds, the official puzzle booklets will not contain the rules of puzzles, only the names. It is advised to bring at least one Instruction Booklet for a team for these rounds.

34. In any case of inconsistency between the Instruction Booklet and the official Puzzle Booklets, e.g. rules or points, the information in the Instruction Booklet will be considered valid. All the information announced during the Q&A session is superior to the information in Instruction Booklet and Puzzle Booklets.

35. In the competition hall, a timer counting down to the end of the round will be visible for all the competitors.

Credits

36. All the sample puzzles in this Instruction Booklet were made by the following Slovak authors: Bielíková Michaela, Demiger Matúš, Forišek Michal, Hromcová Zuzana, Plaštiak Andrej, Uher Matej. They cannot be commercially used. All rights have been reserved.

37. We would like to thank UKPA (United Kingdom Puzzle Association), the organizers of WSC & WPC 2014, who kindly let us use parts of the Competition Rules from the Instruction Booklet published for the aforementioned event.

38. We would like to thank all the active members of WPC community, who helped us to unveil all the ambiguous and incorrect instructions at the WPF forum.

Finals and play-offs

Overview

The top 10 competitors from the individual competition will qualify for the main play-off (finals). In case of any equality between the points of the top competitors, the additional criteria are the following (in the given order):

- sum of points without time bonuses
- number of points in the longest round of the championship (Round 9)
- tie-breaking puzzle

The top 5 competitors from Under 18 and the top 5 competitors from Over 50 category will qualify for special play-offs, which will take place between the 3 rounds of the finals. The format of these play-offs will have different format as the finals, as described below. The additional criteria in case of the equality of points of the top 5 contestants in the age category are the same as for the main category.

Finals

Finals will be divided into three rounds.

The first round will feature competitors who finished in positions 7-10, with staggered starts determined by points' differences, as defined below.

The winner of the first round, 'A', will progress into the second round along with competitors who finished in positions 4-6. 'A' will have a staggered start as determined by the 7th place competitor.

The winner of the second round, 'B', will progress into the third round along with competitors who finished in positions 1-3. 'B' will have a staggered start as determined by the 4th place competitor. This round will determine the podium places for the 25th World Puzzle Championship.

The time limit for each round will be 25 minutes.

In each round of the finals, 4 puzzles will be solved. These puzzles will be chosen by play-off competitors from the set of puzzles in the corresponding section of the Instruction Booklet.

For each round of finals, 8 different puzzles are prepared. The competitor on the best position in this round will choose one puzzle, which will be solved first in this round of the finals, and one puzzle, which will not be solved at all. The competitor on the second best position will choose from the remaining 6 puzzles, one puzzle, which will be solved second, and one, which will not be solved at all. The competitor on the third best position will choose from the remaining 4 puzzles, one puzzle, which will be solved third, and one, which will not be solved at all. The last competitor will choose from the remaining 2 puzzles, one puzzle, which will be solved last in this round of the finals.

The selection of puzzles for the finals will take place before the corresponding play-off round, when all four competitors from this round are present.

Under 18 play-off

Under 18 play-off will take place between first and second round of the finals. Competitors will solve 3 puzzles in the order which is defined in the corresponding section of the

Instruction Booklet. The time limit for this round will be 25 minutes. This round will determine the first five places in Under 18 category for the 25th World Puzzle Championship.

Over 50 play-off

Over 50 play-off will take place between second and third round of the finals. Competitors will solve 3 puzzles in the order which is defined in the corresponding section of the Instruction Booklet. The time limit for this round will be 25 minutes. This round will determine the first five places in Over 50 category for the 25th World Puzzle Championship.

Staggered starts

In each round of all play-offs, the competitor on the best position in this round will start solving at 25:00. The competitor on the worst position in this round will start solving at 20:00. Starting times of other competitors will be calculated according to their points, proportionally.

Solving and Submission

When a play-off competitor completes a puzzle, he/she must raise his/her hand to indicate to a judge to enter the submission period.

The entire puzzle will then be checked over the next minute. After one minute, if the puzzle is correct, the judge will allow the competitor to begin the next puzzle. If the puzzle is incorrect, the judge will return the incorrect puzzle to the competitor. The competitor can resubmit a returned puzzle at any time, and will again enter the submission period.

Each round of the play-off stops either with the end of the time limit, or when 3 play-off competitors solve correctly all puzzles in the round, whichever is earlier.

Team play-off

The top 4 teams after the Preliminary Rounds will be qualified to the Team Play-off. In case of a tie, the additional criteria are the following (in the given order)

- sum of points in the team rounds
- sum of points without time bonuses (either team, or individual)
- tie-breaking puzzle

The format of the Team Play-off will be the Weakest link, i.e. the members of the team will start solving individually and after they submit their puzzles, they will be allowed to join the team table where a team puzzle will be solved.

The time limit for the whole round is 40 minutes.

In the first part, 8 different puzzles will be solved individually. These puzzles are divided into 4 pairs and it is up to the team to decide which solver will solve which pair of puzzles. The list of the puzzles can be found in the corresponding section of the Instruction Booklet.

After a competitor submits his/her individual puzzles, he/she will get a part of the team puzzle and be allowed to join the corresponding team table, where a team puzzle will be solved. The individual puzzles must be submitted at once. The same rules are applied after the submission as in the Individual Play-offs. Team members will be not allowed to continue to their team table unless both puzzles have been solved correctly.

The team puzzle will consist of 5 grids interconnected in a shape of a cross. The middle grid will be prepared on the table, while 4 other puzzles will be distributed to the members of the team after they submit their individual puzzles (each solver will get one grid). The positions of the other puzzles will not be marked anywhere - it is up to the team to decide how to interconnect the grids properly. The layout and puzzle types can be found in the corresponding section of the Instruction Booklet.

After a team submits the team puzzle, the same rules will be applied as for the Individual Playoffs.

This play-off will determine the podium places in the team competition for the 25th World Puzzle Championship, with the criteria being in the following order:

- number of correctly solved puzzles in the Team Play-off
- sooner finish in the Team Play-off
- sum of points in the Preliminary Rounds

Additional prizes

Additional prizes will be awarded to:

- Top 3 competitors under 18
- Top 3 competitors over 50
- Best Newcomer

The WPF determines a participant's age by what year they were born. Under 18 = Born on or after 1 January 1998 (ie, they are not yet, and will not become 18 this year). Over 50 = Born on or before 31 December 1966 (ie, they are over, or will become 50 this year).



Round 1 – SLOVAKIA

Individual

Thursday 20th October 2016, 09:00 – 09:25

25 minutes – 1 puzzle – 300 points

1. DISTANCES300 points

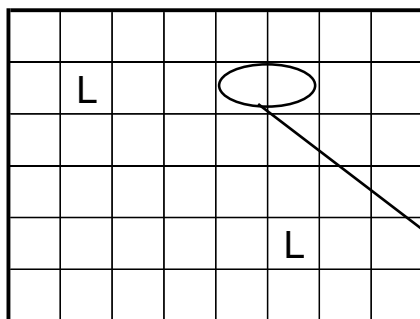
This round will consist of one Distances puzzle interconnected with some Scrabble puzzles.

In Distances, every correctly placed word will be awarded 10 points. Scrabble puzzles are meant to help competitors place some letters into Distances, so they will not be awarded any points, not even for a completely solved puzzle.

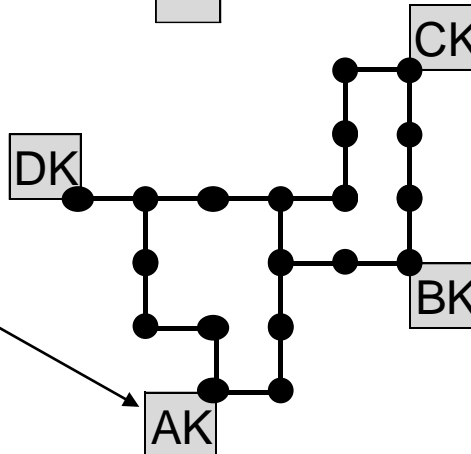
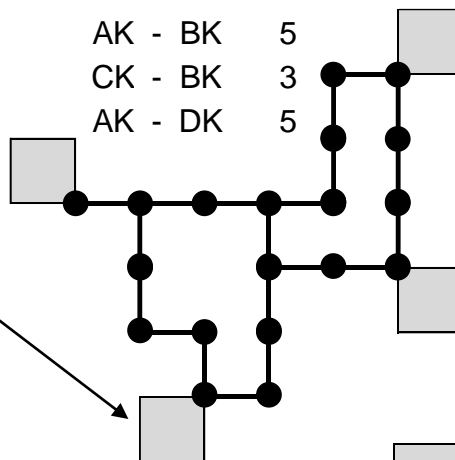
Although solving Scrabble puzzles should help competitors with Distances and make it considerably easier, the Distances puzzle is completely solvable with exactly one solution without any clues from Scrabbles.

In order to complete this round and earn time bonus, only Distances must be solved completely.

SLOVAKIA
PUSULA
ZIGZAG
MASYU
LOOP



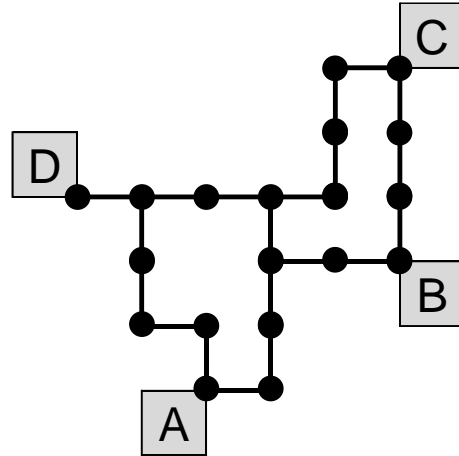
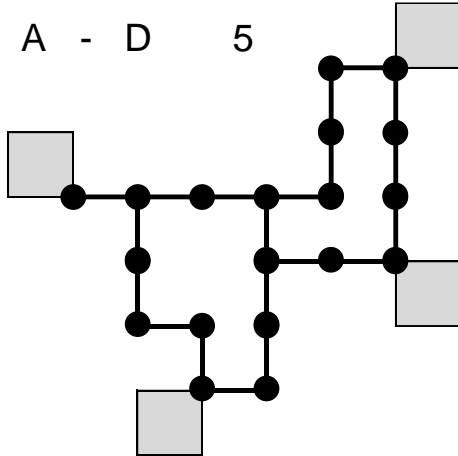
AK - BK 5
CK - BK 3
AK - DK 5



1. DISTANCES (30 x 10 points)

You are given **the shortest distances** between some pairs of places in the list. Fill in all the given squares with the places from the list so that the shortest distances between them match the given table. The distance between each two black circles along the lines on the map is always 1 unit. In order to be awarded points for a place at a correct position, its name has to be clearly written into the corresponding square.

- A - B 5
- C - B 3
- A - D 5



List of places: A, B, C, D

Additional puzzles: SCRABBLE (no points)

Place all words from the given list into the grid so that each word can be read from left to right or from top to bottom in the grid exactly once. All words must be orthogonally connected. No words except the ones listed can appear anywhere in the grid (not even a two-letter word). For each grid, there will be one significant letter given in a circle next to the grid. Each occurrence of this significant letter in the grid has been given.

Some groups of cells have been marked with an ellipse. These cells must always contain letters. The word in the ellipse (read from top to bottom or from left to right) will be one of the places from the list for the Distances puzzle and its correct position will be pointed by an arrow corresponding to the ellipse.

(L)

	L						
				L			

- SLOVAKIA
- PUSULA
- ZIGZAG
- MASYU
- LOOP

				M		Z	
S	L	O	V	A	K	I	A
	O			S		G	
	O			Y		Z	
	P	U	S	U	L	A	
						G	



Round 2 – MISCELLANEOUS

Individual

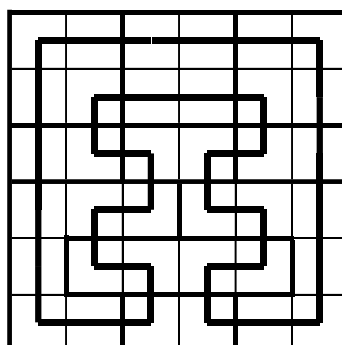
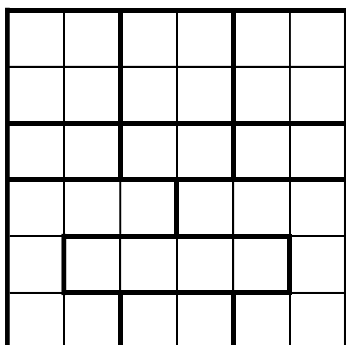
Thursday 20th October 2016, 09:40 – 11:10

90 minutes – 25 puzzles – 1100 points

1. DOUBLEBACK	80 points
2. BATTLESHIPS	51 points
3. YAJILIN	29 points
4. COMPASS.....	91 points
5. CAVE.....	49 points
6. NURIKABE	42 points
7. SNAKE	55 points
8. HEYAWAKE	42 points
9. DIVISION	11 points
10. NONCONSECUTIVE EASY AS 0123	37 points
11. CRISS – CROSS	26 points
12. RECTANGLES	34 points
13. INFECTION	49 points
14. SIMPLE LOOP	21 points
15. TAPA	23 points
16. ODD-EVEN DOUBLE BLOCK	47 points
17. LITS.....	24 points
18. TOM TOM.....	69 points
19. EQUAL SUMS	24 points
20. MASYU	14 points
21. TETROSCOPE.....	67 points
22. TENTS.....	14 points
23. FENCES	56 points
24. SYMMETRY FILLOMINO	98 points
25. GREATER THAN SKYSCRAPERS.....	47 points

1. DOUBLEBACK (80 points)

Draw a single loop consisting of vertical and horizontal line segments, so that it passes through the centre of each cell exactly once. The loop can never cross itself. The loop must enter and exit each contiguous outlined region exactly twice.



2. BATTLESHIPS (51 points)

Place the given fleet into the grid. The ships cannot touch each other, not even diagonally. The ships may be rotated. The clues outside the grid indicate the number of ship segments in the corresponding direction. If a cell is marked with X, then no segment of any ship can be placed in this cell.

The left grid has clues 1, 2, 1 on the right and 0, 2, 1 on the bottom. The right grid has clues 1, 2, 1 on the right and 0, 2, 1 on the bottom. Between them are four ship icons: two circles and two semi-circles.

3. YAJILIN (29 points)

Shade some cells of the grid and draw a loop which passes through all unshaded cells except those containing clues. Each clue consists of a number and an arrow and indicates the number of shaded cells in the direction pointed by the arrow. Shaded cells cannot touch each other horizontally nor vertically. Cells with clues can not be shaded and are a not part of the loop.

The left grid has clues 1 up and 1 down. The right grid has a loop drawn around shaded cells and clues 1 up and 1 down.

4. COMPASS (91 points)

Split the grid along the given lines into orthogonally connected regions, exactly one for each clue. Each clue consists of four parts. The number at the top of a clue must be equal to the number of cells within the region lying above the clue, regardless of their horizontal position. Clues on other positions work correspondingly for cells to the right, below and to the left of the clue.

The left grid has clues 0, 1, 2, 3 on the diagonal. The right grid has clues 0, 1, 2, 3 on the diagonal and a thick border.

5. CAVE (49 points)

Shade some cells in the grid to form a single orthogonally connected shape. All unshaded cells must be connected to the edge of the grid through orthogonally adjacent unshaded cells. All the given numbers must be a part of the shaded shape. The given numbers indicate the number of cells inside the shape that can be seen from that cell, including the cell itself. The view from each cell is blocked by the grid borders and cave walls – i.e. a cell is visible from another cell if and only if they are both inside a cave and all the cells between them (either horizontally, or vertically, depending of their position) must be inside the cage as well.

2				2
	3			
		4		
			5	
5				6

2		X	X	2
X	3	X		
		4		X
X	X	X	5	
5				6

6. NURIKABE (42 points)

Shade some empty cells in the grid to divide it into white regions (islands), each containing exactly one of the given numbers. The area of each white region must be equal to the number it contains. No two cells belonging to distinct white areas can touch each other orthogonally. All shaded cells must be orthogonally connected with each other, but no 2x2 group of cells can be entirely shaded.

	4			1
				1
			1	
2				

	4			1
				1
			1	
2				

7. SNAKE (55 points)

Place a one cell wide snake into the grid so it does not touch itself, not even diagonally. The head and tail of the snake are marked with a circle. Numbers outside the grid indicate how many cells in that row or column are occupied by the snake.

				●
4				
4				
1				
●				

				●
4				
4				
1				
●				

8. HEYAWAKE (42 points)

Shade some empty cells in the grid. No two shaded cells can be orthogonally adjacent. All of the unshaded cells should form one continuous region. A number given in a region indicates the number of shaded cells in that region. There can never be a horizontal or vertical line of unshaded cells that crosses two region boundaries.

1		0		1
0				
	2		1	

1		0		1
	■			■
0			■	
	2	■	1	
	■			■

9. DIVISION (11 points)

Divide the grid along the given lines into the given number of regions of the same shape and size. Regions can be rotated and reflected.

	■			
			■	

4

	■			
			■	

10. NONCONSECUTIVE EASY AS 0123 (37 points)

Place the numbers 0, 1, 2, 3 (0, 1, 2 in the example) in the grid so that each digit appears exactly once in any row or column. Some cells will remain empty. The numbers outside of the grid indicate the first visible number in the corresponding row or column. No two consecutive numbers (i.e. numbers whose difference is exactly one) may share an edge.

0					
2					
2					
1					
1					

0		1		2
2	0		1	
	2	0		1
1		2	0	
	1		2	0

11. CRISS – CROSS (26 points)

Place all the given words into the grid so that every word can be read from left to right or from top to bottom exactly once. Every cell must contain exactly one letter.

AHOJ
HALO
OLAF
JAJ

A	H	O	J
	A		
	L		J
O	L	A	F
		J	

12. RECTANGLES (34 points)

Divide the whole grid along the given lines into rectangles or squares so that each of the rectangles contains exactly one number. Numbers indicate the area of the region. Regions cannot overlap each other.

				9			
	8						
4		4					5
12				9		3	
					3		
			7				

				9			
	8						
4		4					5
12					9		3
						3	
			7				

13. INFECTION (49 points)

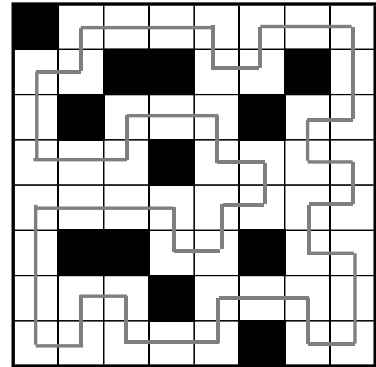
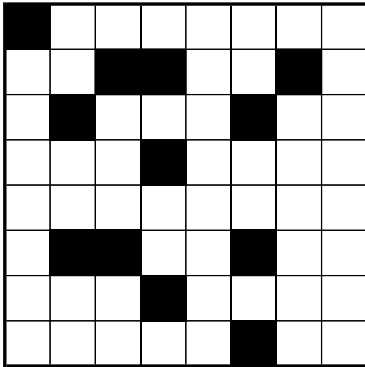
Place numbers from 1 to 4 into empty cells. All cells with numbers must be orthogonally connected. A number in a cell indicates how many orthogonally adjacent cells contain a number. Same numbers cannot share an edge.

		1	3	
1	4	2	4	
	1		1	

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

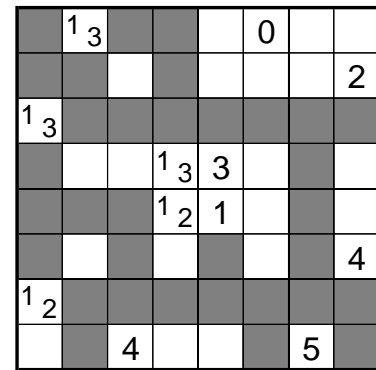
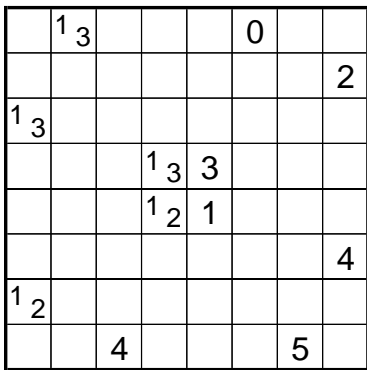
14. SIMPLE LOOP (21 points)

Draw a single loop consisting of vertical and horizontal line segments, so that it passes through the centre of each white cell exactly once. The loop can never cross itself.



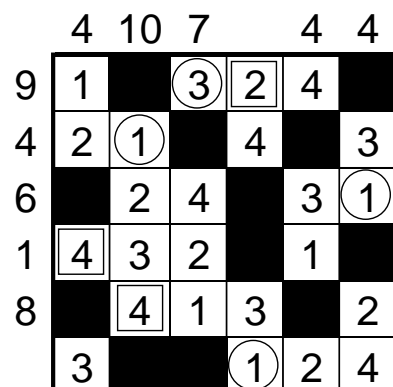
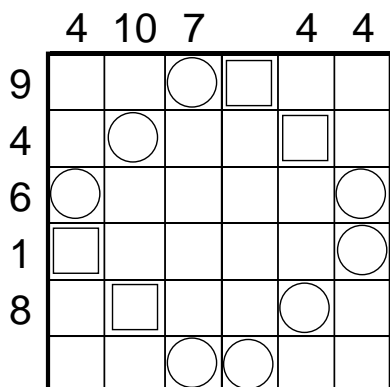
15. TAPA (23 points)

Shade some cells to create a continuous wall. Numbers in a cell indicate the lengths of consecutive shaded blocks in the cells neighbouring diagonally and orthogonally. If there is more than one number in a cell, there must be at least one white cell between the shaded blocks. Shaded cells cannot form a 2x2 square (or larger). Cells containing numbers cannot be shaded.



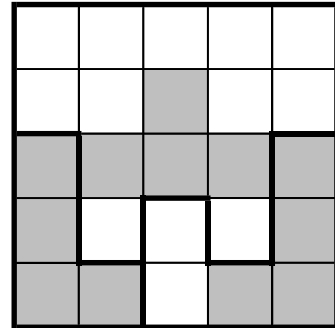
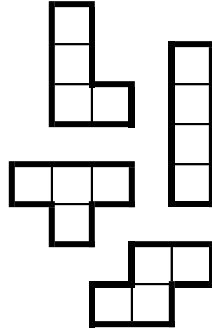
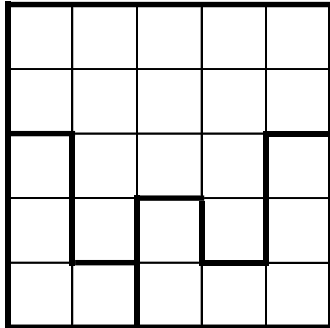
16. ODD-EVEN DOUBLE BLOCK (47 points)

Shade 2 cells in every row and column. Fill the remaining cells with the numbers 1 to N, so that each number appears exactly once in every row and column. N equals the size of the grid minus 2. There are some numbers outside the grid and they indicate the sum of the numbers between the shaded cells in that row or column. The cells with circles can contain only odd numbers. The cells with squares can contain only even numbers. Cells with squares and circles can be shaded.



17. LITS (24 points)

Shade exactly four cells in each of the outlined regions so that they are orthogonally interconnected within the region and form one of the given shapes. Identical pieces may not touch each other orthogonally. Tetrominoes may be rotated and reflected, however they are still considered as the same type. All the shaded cells must be interconnected. Shaded cells cannot form a 2x2 square.



18. TOM TOM (69 points)

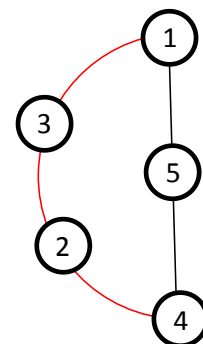
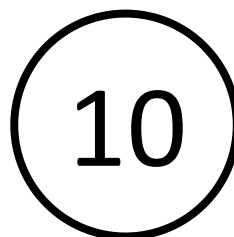
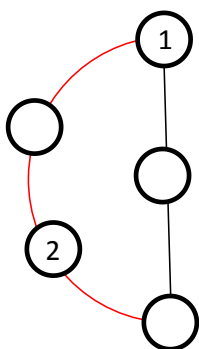
Insert numbers from 1 to N where N is the size of the grid into each cell of the grid so that each number appears exactly once in any row or column. Numbers in the top-left corners of the smaller regions indicate the sum, difference, product or quotient of the numbers inside the region applied successively to all numbers in the region, starting with the largest number for subtraction and division. Numbers can repeat within a region. It is a part of a solution to reveal which operation was applied in the region.

12		24	
8	4		
			9
4			

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

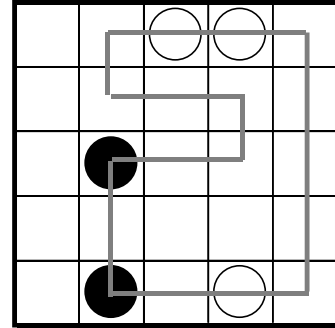
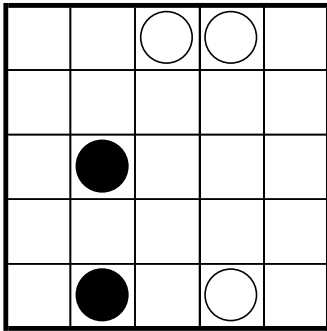
19. EQUAL SUMS (24 points)

Insert one number from 1 to N (where N is the number of circles) into each circle, so that the sum of numbers on each line or curved line is the same. Every number must be used exactly once. The sum will be given in a circle next to the figure.



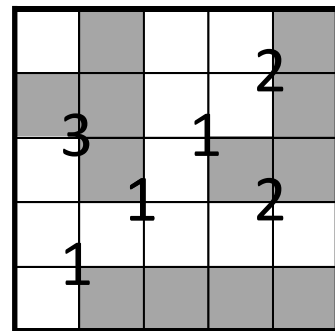
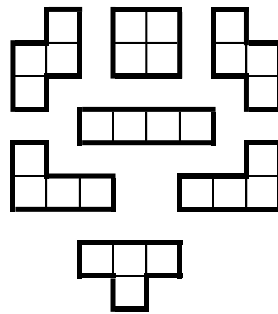
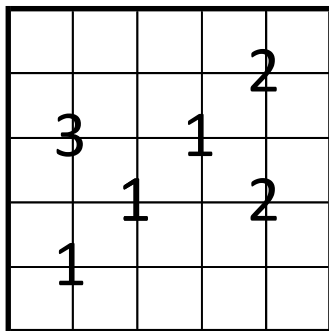
20. MASYU (14 points)

Draw a single loop that travels horizontally and vertically between cell centers and passes through each circle. The loop must go straight through white circles, but must turn in at least one of the adjacent cells. The loop must turn in the black circles and go straight through both following cells.



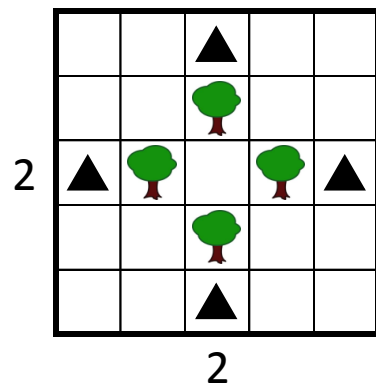
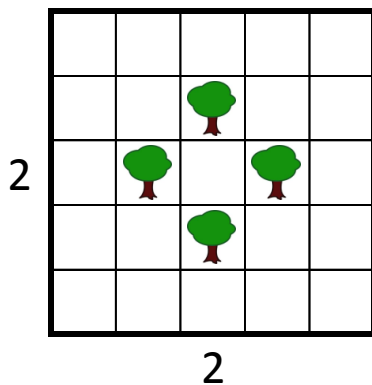
21. TETROSCOPE (67 points)

Place the full set of tetrominoes (tetrominoes I, J, T in the example) into the grid. Tetrominoes may be rotated but not reflected. Numbers at the intersections of four cells represent how many of these cells are occupied by tetrominoes. Tetrominoes may not touch each other, not even diagonally. Each tetromino must be used exactly once.



22. TENTS (14 points)

Place some tents (at most one tent per cell) into the grid so that they don't touch each other, not even diagonally. Numbers outside the grid indicate how many tents are located in the corresponding row/column. Each tree has to be connected to exactly one tent in one of its four orthogonally adjacent cells, but it can touch other tents. No tent can be placed into a cell containing a tree.



23. FENCES (56 points)

Draw a single continuous loop along the given lines. A clue in a cell indicates how many edges of that cell are used by the loop. The loop may not touch or cross itself.

1	1	1		0
	2	2	2	
0		3	3	3

1	1	1		0
	2	2	2	
0		3	3	3

24. SYMMETRY FILLOMINO (98 points)

Divide the grid along the given lines into regions or fill in the whole grid with numbers so that no two regions with the same area share an edge. Each of the given numbers represents the area of the region it belongs to. A region may contain none, one, or more of the given numbers. All regions must have rotational symmetry. Only the solutions that are consistent within the whole grid will be accepted. If all borders are marked it is enough, as well as if all digits are written.

				3
	5		2	
		3		
	1		6	
3				

1	5	3	3	3
5	5	5	2	2
3	5	3	3	3
3	1	6	6	6
3	6	6	6	1

25. GREATER THAN SKYSCRAPERS (47 points)

Place number from 1 to N where N is the size of the grid into each cell so that each digit appears exactly once in any row or column. Each number in the grid represents the height of a skyscraper. The clues outside of the grid indicate how many skyscrapers can be seen when looking from the corresponding direction. Higher skyscrapers block the view of smaller ones. If there is an inequality sign between a pair of orthogonally adjacent cells, the numbers in these cells must be placed according to the given sign.

Clues: 5 (top), 5 (left), 4 (left), < (between row 4, col 2 and row 4, col 3)

Clues: 5 (top), 5 (left), 4 (left), 5 (right), 4 (right), 5 (right), 4 (right), < (between row 4, col 3 and row 4, col 4)



Round 3 – KROPKI

Individual

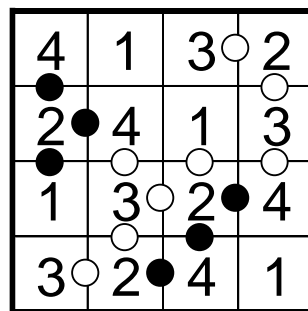
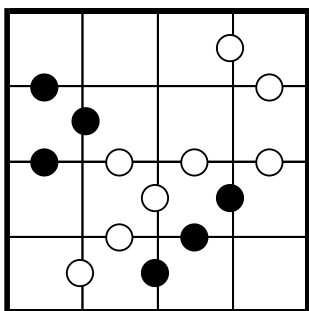
Thursday 20th October 2016, 11:30 – 12:30

60 minutes – 16 puzzles – 750 points

1. KROPKI	22 points
2. KROPKI	57 points
3. KROPKI	57 points
4. KROPKI	15 points
5. HEXA KROPKI	18 points
6. HEXA KROPKI	58 points
7. OUTSIDE KROPKI	40 points
8. OUTSIDE KROPKI	63 points
9. SCRABBLE KROPKI	41 points
10. SCRABBLE KROPKI	45 points
11. LOOP KROPKI	38 points
12. LOOP KROPKI	22 points
13. FILLOMINO KROPKI	66 points
14. FILLOMINO KROPKI	86 points
15. KAKURO KROPKI	33 points
16. KAKURO KROPKI	89 points

1. – 4. KROPKI (22 + 57 + 57 + 15 points)

Fill in the whole grid with digits 1 to N (where N is the size of the grid) so that each row and column contains each digit exactly once. If there is a white dot between a pair of orthogonally adjacent cells, then the cells must contain numbers whose difference is exactly one. If there is a black dot between a pair of orthogonally adjacent cells, then the cells must contain numbers whose quotient is exactly two. There can be either black or white dot between 1 and 2. All possible dots have been given.



5. – 6. HEXA KROPKI (18 + 58 points)

Fill in the whole figure with digits 1 to N (N is the maximum size of a row) so that each row (in any of the three directions) contains each digit at most once. If there is a white dot between a pair of orthogonally adjacent cells, then the cells must contain numbers whose difference is exactly one. If there is a black dot between a pair of orthogonally adjacent cells, then the cells must contain numbers whose quotient is exactly two. There can be either black or white dot between 1 and 2. All possible dots have been given.



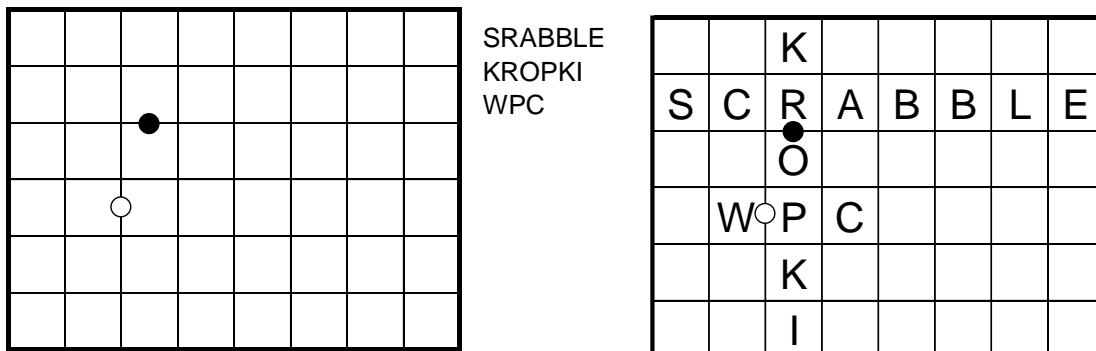
7. – 8. OUTSIDE KROPKI (40 + 63 points)

Fill in the whole grid with digits 1 to N (where N is the size of the grid) so that each row and column contains each digit exactly once. If there is a white dot between a pair of orthogonally adjacent cells, then the cells must contain numbers whose difference is exactly one. If there is a black dot between a pair of orthogonally adjacent cells, then the cells must contain numbers whose quotient is exactly two. There can be either black or white dot between 1 and 2. All dots from each row or column have been removed from the grid. They must appear in the corresponding row or column in the given order. There may be some gaps between the circles. All possible dots have been given.



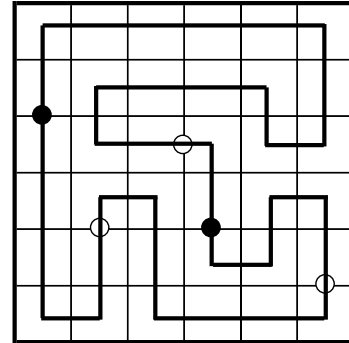
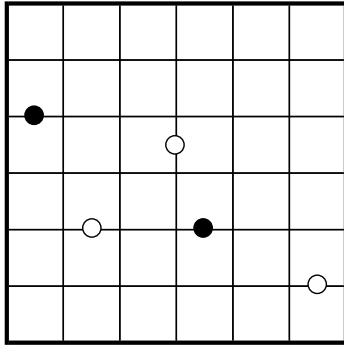
9. – 10. SCRABBLE KROPKI (41 + 45 points)

Place all words from the given list into the grid so that each word can be read from left to right or from top to bottom exactly once. All words must be orthogonally connected. Words that are not on the list cannot appear in the grid (not even two-letter words). The dots in the grid provide information about the lengths of word segments divided by the dot. If there is a white dot between a pair of word segments, then the difference of the lengths of these segments is exactly one. If there is a black dot between a pair of word segments, then the quotient of the lengths of these segments is exactly two. There can be either black or white dot between word segments of lengths 1 and 2. There must be a word passing through each of the given dots. Not all possible dots have been given, but all the given dots must be part of the words.



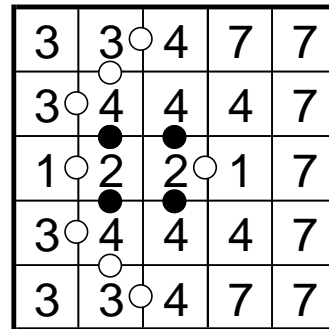
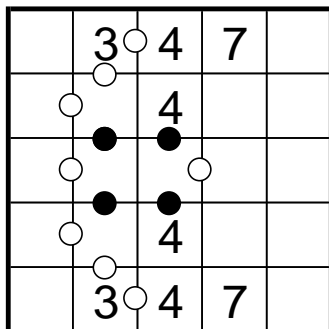
11. – 12. LOOP KROPKI (38 + 22 points)

Draw a single closed loop that travels horizontally and vertically through all white cells. The loop cannot touch or cross itself. The dots in the grid provide information about the lengths of loop segments (in number of cells). If there is a white dot between a pair of loop segments, then the difference of the lengths of these segments is exactly one. If there is a black dot between a pair of loop segments, then the quotient of the lengths of these segments is exactly two. There can be either black or white dot between loop segments of lengths 1 and 2. Not all possible dots have been given, but all the given dots must be part of the loop.



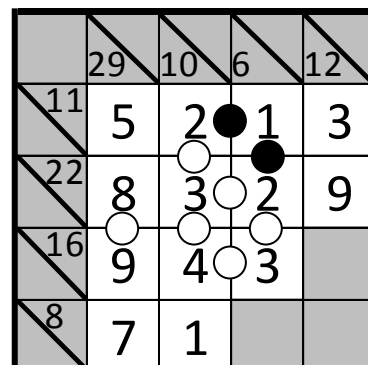
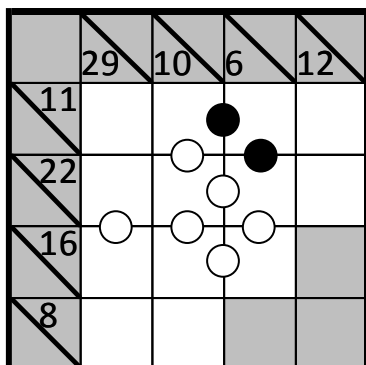
13. – 14. FILLOMINO KROPKI (66 + 86 points)

Divide the grid along the given lines into regions so that no two regions with the same area share an edge. Each of the given numbers must represent the area of the region it belongs to. A region may contain none, one or more of the given numbers. If there is a white dot between a pair of orthogonally adjacent cells, then the cells must contain numbers whose difference is exactly one. If there is a black dot between a pair of orthogonally adjacent cells, then the cells must contain numbers whose quotient is exactly two. There can be either black or white dot between 1 and 2. All possible dots are given.



15. – 16. KAKURO KROPKI (33 + 89 points)

Fill all empty squares using numbers 1 to 9 so the sum of each horizontal block equals the clue on its left, and the sum of each vertical block equals the clue on its top. In addition, no number may be used in the same block more than once. If there is a white dot between a pair of orthogonally adjacent cells, then the cells must contain numbers whose difference is exactly one. If there is a black dot between a pair of orthogonally adjacent cells, then the cells must contain numbers whose quotient is exactly two. There can be either black or white dot between 1 and 2. All possible dots have been given.





Round 4 – FULL CLASSICS

Individual

Thursday 20th October 2016, 14:10 – 14:45

35 minutes – 8 puzzles – 430 points

1. FULL TAPA28 points
2. FULL TAPA55 points
3. FULL CAVE44 points
4. FULL CAVE45 points
5. FULL BOSNIAN SNAKE.....67 points
6. FULL MASYU33 points
7. FULL NURIKABE.....71 points
8. FULL SCRABBLE.....86 points

In each puzzle your goal is to shade some cells to get a valid solution of that puzzle.

1. – 2. FULL TAPA (28 + 55 points)

Shade some cells to get a valid Tapa solution:

Shade some cells to create a continuous region of shaded cells. Numbers in the remaining (unshaded) cells indicate the lengths of consecutive shaded blocks in the cells neighboring orthogonally and diagonally. If there is more than one number in a cell, there must be at least one white cell between the shaded blocks. Shaded cells cannot form a 2×2 square.

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

			4	2		
	6					
1	1	1	4	7	2	2
1						
1	2	3	4			

3. – 4. FULL CAVE (44 + 45 points)

Shade some cells to get a valid Cave solution:

Leave some cells white to form a single orthogonally connected shape. Shade all the remaining cells. All shaded cells must be connected to the edge of the grid through other orthogonally adjacent shaded cells. The remaining (unshaded) numbers indicate the number of cells inside the shape that can be seen from that cell, including the cell itself. Cells do not see past shaded cells.

4	2	4	4	6
5	3	3	5	5
6	5	7	4	3
3	5	4	6	5
2	3	2	4	4

		3	3	5		
					4	3
		5	4	6	5	
2	3					

5. FULL BOSNIAN SNAKE (67 points)

Shade some cells to get a valid Bosnian snake solution:

Shade some cells in the grid to create a single one-cell-wide snake in the grid. The snake cannot touch itself, not even diagonally. The remaining (unshaded) numbers in the grid indicate how many of the 8 cells around it are occupied by the snake. The position of the head and the tail is unknown.

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

2		4	2	1
2				2
3	5	7		3
				2
	4	3	2	1

6. FULL MASYU (33 points)

Shade some cells and draw a Masyu loop through the remaining cells to get a valid Masyu solution:

Shade some cells in the grid. Then, draw a single loop that travels horizontally and vertically between cell centers and passes through each circle. The loop must go straight through white circles, but must turn in at least one of the adjacent cells. The loop must turn in the black circles and go straight through both following cells. The loop cannot pass through the shaded cells.

○	●	●	○	○
●	○	○	●	●
○	○	●	○	○
○	●	○	○	●
●	○	○	●	○

●	○	○	●	
○			○	
○			○	
●	○	○	●	

7. FULL NURIKABE (71 points)

Shade some cells to get a valid Nurikabe solution:

Shade some cells so that the grid is divided into white regions, each containing exactly the same number of digits as indicated by their value. The area of each white region must be equal to the number it contains. Two white areas may touch each other only diagonally. All shaded cells must be orthogonally connected to each other, but no 2x2 group of cells can be entirely shaded.

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

5	5	5	5	5
5	5	5	5	
5				
		2	2	

8. FULL SCRABBLE (86 points)

Shade some cells to get a valid Scrabble solution:

Shade all the redundant letters in the grid so that all words from the given list appear into the grid exactly once, consisting of the remaining letters. Each word can be read from left to right or from top to bottom. All words must be orthogonally connected. Words that are not on the list cannot appear in the grid (not even two-letter words).

A	H	O	J	M
H	A	L	O	A
O	L	A	J	T
J	O	L	A	F
F	J	A	J	H

AHOJ
HALO
OLAF
JAJ

A	H	O	J	
	A			
	L		J	
	O	L	A	F
			J	



Round 5 – FINEST COLLECTION

Individual

Thursday 20th October 2016, 15:00 – 16:00

60 minutes – 16 puzzles – 720 points

1. COINS.....	20 points
2. COINS	86 points
3. INDEX SKYSCRAPERS.....	37 points
4. INDEX SKYSCRAPERS.....	21 points
5. DOMINO TILES.....	81 points
6. DOMINO FIGURE	35 points
7. WALLS	16 points
8. WALLS	76 points
9. SLOVAK SUMS.....	33 points
10. SLOVAK SUMS.....	64 points
11. HEXA SLOVAK SUMS	41 points
12. HEXA SLOVAK SUMS	90 points
13. HIDATO.....	13 points
14. HIDATO.....	48 points
15. HEXA HIDATO	16 points
16. HEXA HIDATO	43 points

1. – 2. COINS (20 + 86 points)

Fill in the whole grid with numbers representing values of coins (1, 2, 5, 10, 20, 50), so that each of the cells contains exactly one value. Numbers outside the grid indicate the sum of the values in the corresponding row and column. Value of each coin can be used 0, 1 or more times.

60					
172					
96					
72					
81					
	250	7	87	67	70

60	50	1	2	2	5
172	50	2	50	20	50
96	50	1	20	20	5
72	50	2	10	5	5
81	50	1	5	20	5
	250	7	87	67	70

3. – 4. INDEX SKYSCRAPERS (37 + 21 points)

Insert number from 1 to N where N is the size of the grid into each cell so that each digit appears exactly once in a row or a column. Each number in the grid represents the height of a skyscraper. The clues inside the grid indicate the number of directions the skyscraper is visible from, when looking from the outside of the grid from the corresponding direction. Higher skyscrapers block the view of smaller ones.

2	1	4	1	1	2
4	1	0	1	1	2
1	2	2	0	4	1
1	2	1	0	0	4
1	4	0	2	1	2
2	1	1	4	2	2

5	2	6	3	1	4
6	3	1	4	2	5
3	4	5	2	6	1
2	5	4	1	3	6
1	6	2	5	4	3
4	1	3	6	5	2

5. DOMINO TILES (81 points)

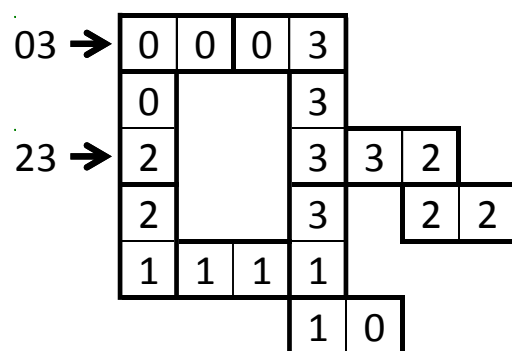
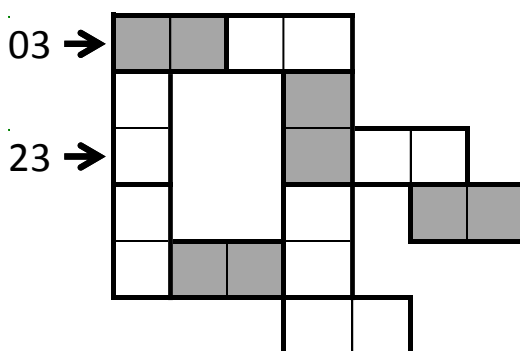
Place domino tiles of size 1x2 cells into the grid, so that each of them contains numbers 1 and 2 exactly once. Tiles can be rotated but they cannot touch each other, not even diagonally. Numbers outside the grid indicate the sum of all the numbers in the corresponding row/column. There will be a hole in the competition puzzle grid that cannot contain any part of the domino tile.

6					
6					
	2	1	4		

6	2	1		1	2
		1	2		
6	2	1		1	2
	2	1	4		

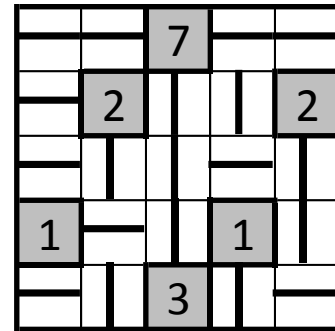
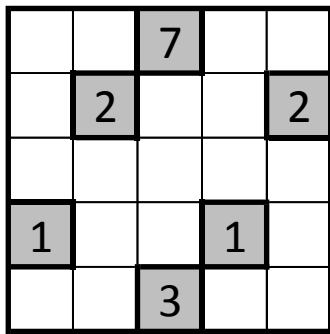
6. DOMINO FIGURE (35 points)

Place a complete set of dominoes (0-0 to 3-3 in the example, 1-1 to 6-6 in the competition puzzle). Wherever two dominoes share an edge, the cells adjacent to the edge must contain the same numbers. Shaded regions must contain double dominoes (0-0, 1-1 etc.). Numbers outside the grid indicate the full sets numbers that appear in the corresponding row or column. The domino set will be given next to the puzzle.



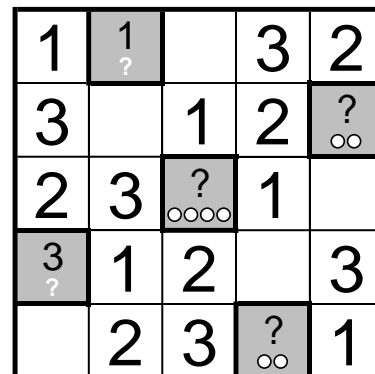
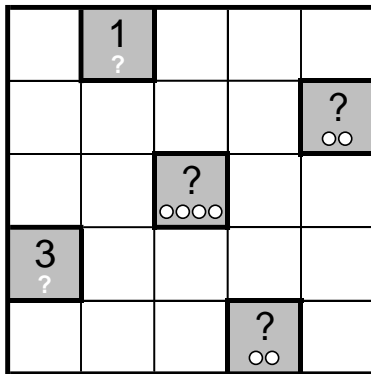
7. – 8. WALLS (16 + 76 points)

Draw a single horizontal or vertical line across the full width or height of the centre of every white cell, so that the total length of all lines touching each black cell is equal to the number given in the corresponding clue.



9. – 10. SLOVAK SUMS (33 + 64 points)

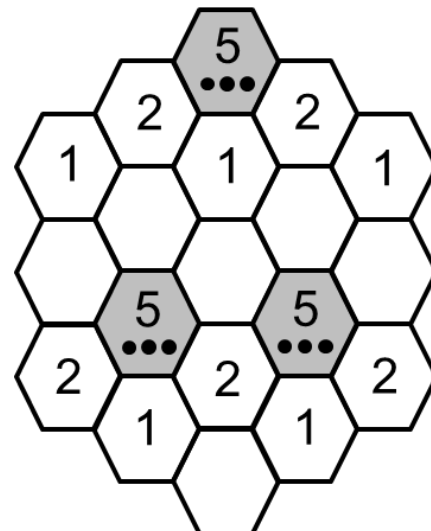
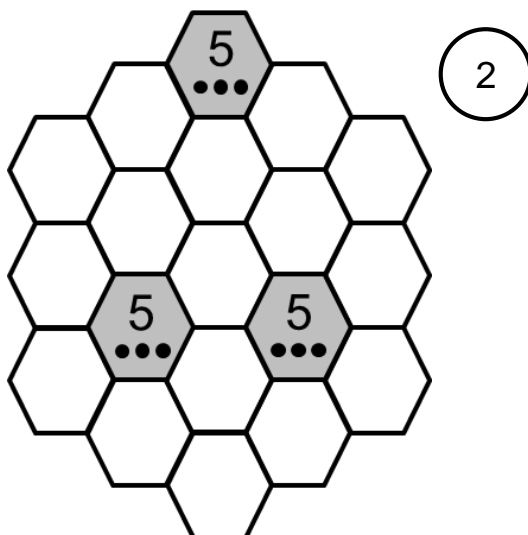
Place digits from the given range in some empty cells, so that each row and column contains each digit exactly once. Clue numbers indicate the sum of orthogonally adjacent digits. The number of circles under a clue number indicates the number of digits involved in this sum. Some numbers or circles may have been replaced with a question mark. Question mark may represent any number, including 0.



1~3

11. – 12. HEXA SLOVAK SUMS (41 + 90 points)

Place digits from 1 to N (N will be given, in the example the N is 2) into some empty white hexagonal cells, so that each row contains each digit exactly once (in every of the three directions). Clue numbers indicate the sum of orthogonally adjacent digits. The number of circles under a clue number indicates the number of digits involved in this sum.



13. – 14. HIDATO (13 + 48 points)

Fill in the whole grid with numbers so that each number from 1 to N (N will be given in a circle next to the grid) appears exactly once in the grid. Each pair of consecutive numbers (i.e. the numbers whose difference is exactly one) must be placed in a pair of orthogonally or diagonally adjacent cells.

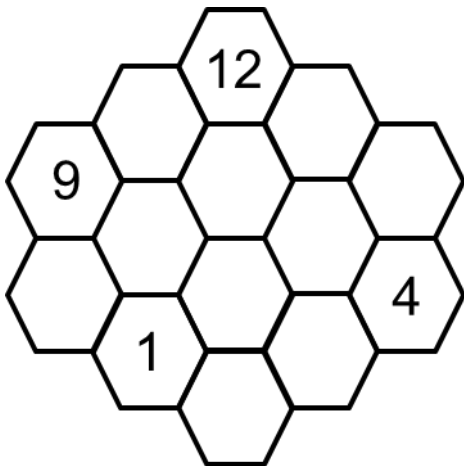
1		7	
5		9	
16		3	

16

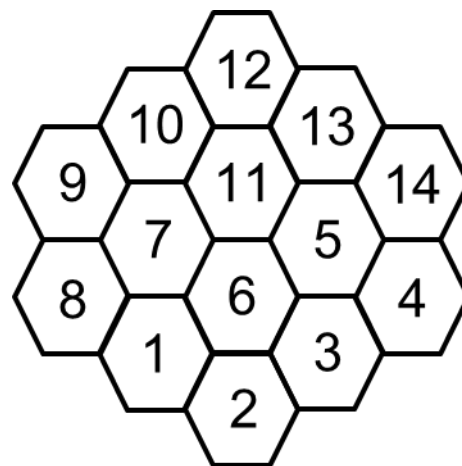
1	6	7	8
5	2	9	10
16	4	3	11
15	14	13	12

15. – 16. HEXA HIDATO (16 + 43 points)

Fill in the whole grid with numbers so that each number from 1 to N (N will be given in a circle next to the grid) appears exactly once in the grid. Each pair of consecutive numbers (i.e. the numbers whose difference is exactly one) must be placed in a pair of cells sharing an edge.



14





Round 6 – SUPERPOSITIONS

Individual

Thursday 20th October 2016, 16:15 – 16:40

25 minutes – 4 puzzles – 300 points

1. SKYSCRAPERS 2 in 1 28 points
2. LOOP 2 in 1 64 points
3. TAPA 4 in 1 124 points
4. PENTOMINO 2 in 1 86 points

In this round, you will always get a grid with clues that gives information about multiple puzzles at once. No partial points are available in this round – in order to be awarded the points for the puzzle, all the grids must be filled correctly.

1. SKYSCRAPERS 2 IN 1 (28 points)

Fill in both grids with numbers from 1 to N where N is the size of the grid into each cell so that no digit is repeated in any row or column. Each number in the grid represents the height of a skyscraper. The clues outside of the grid indicate how many skyscrapers can be seen when looking from the corresponding direction. Higher skyscrapers block the view of smaller ones. The clues in the grid filled with numbers indicate the sum of numbers in both grids at the corresponding positions.

5						
4						
2						
2						
1						

2	4	6	8	10
7	7	5	7	4
7	6	4	6	7
5	6	9	5	5
9	7	6	4	4

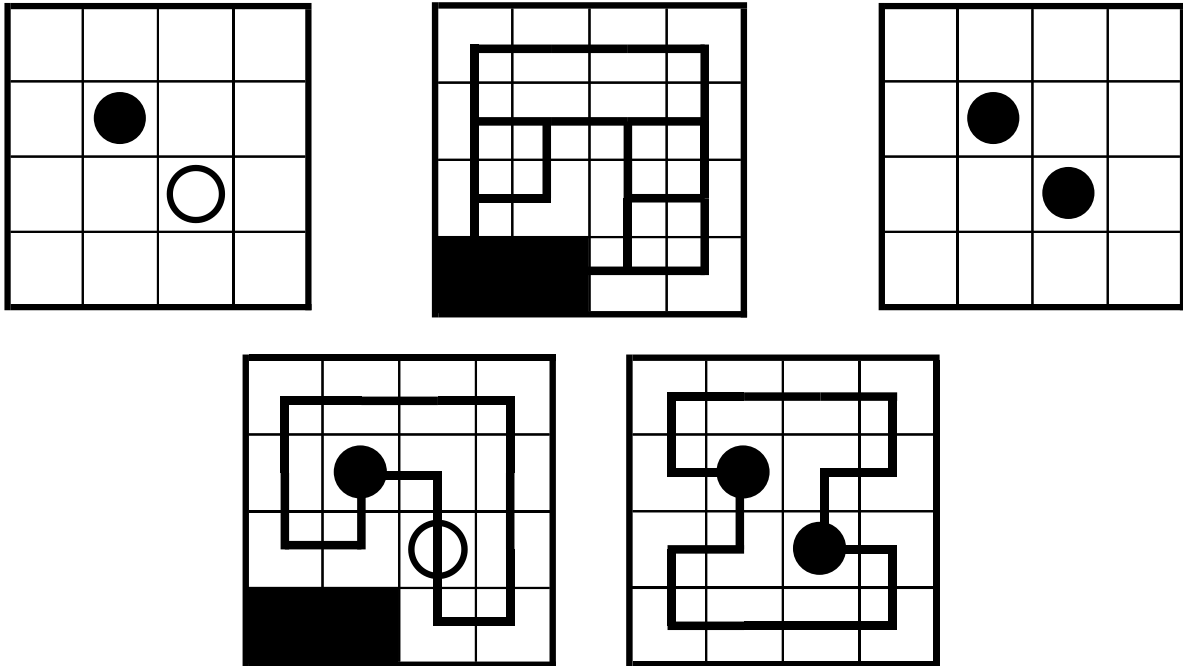
					1
					3
					2
					4
					2

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

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

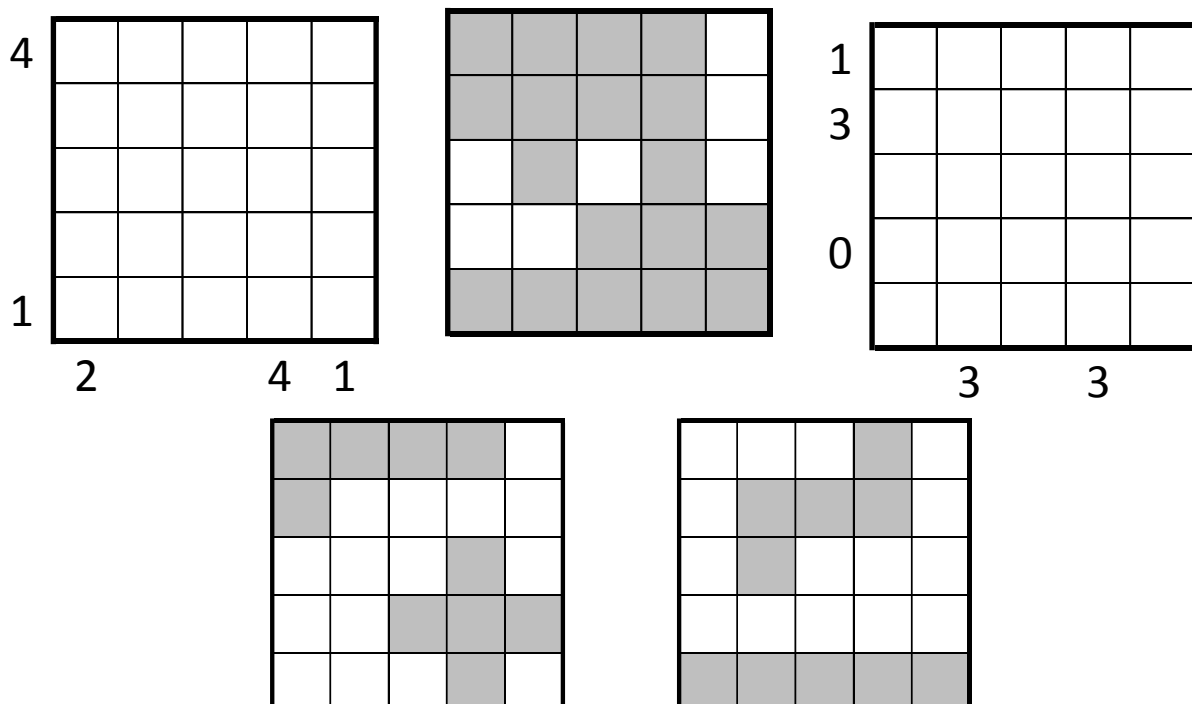
2. LOOP 2 IN 1 (64 points)

Draw a single closed loop into each of the grids that travels horizontally and vertically through all the white cells. Some cells can remain empty. The loop cannot touch or cross itself. The loop must take a turn in each black circle and must pass straight through each white circle. The grid with clues shows the solution from the first grid drawn over the solution of the second grid. Each loop segment in the top grid must be drawn in at least one of the grids. There cannot be a loop segment in any of the bottom grids that is not present in the grid with clues. The empty cells are fully blackened in the grid with clues.



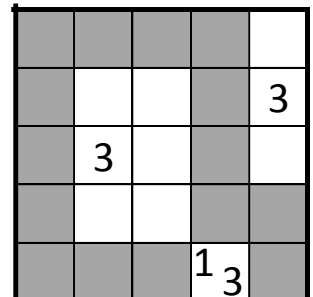
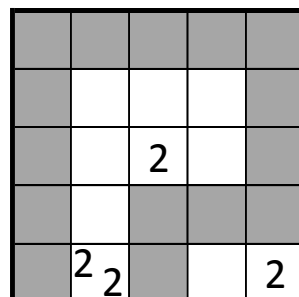
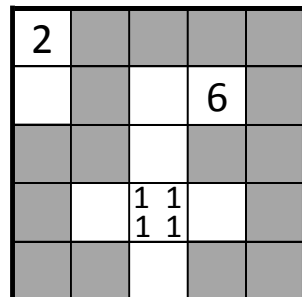
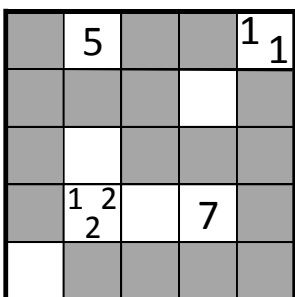
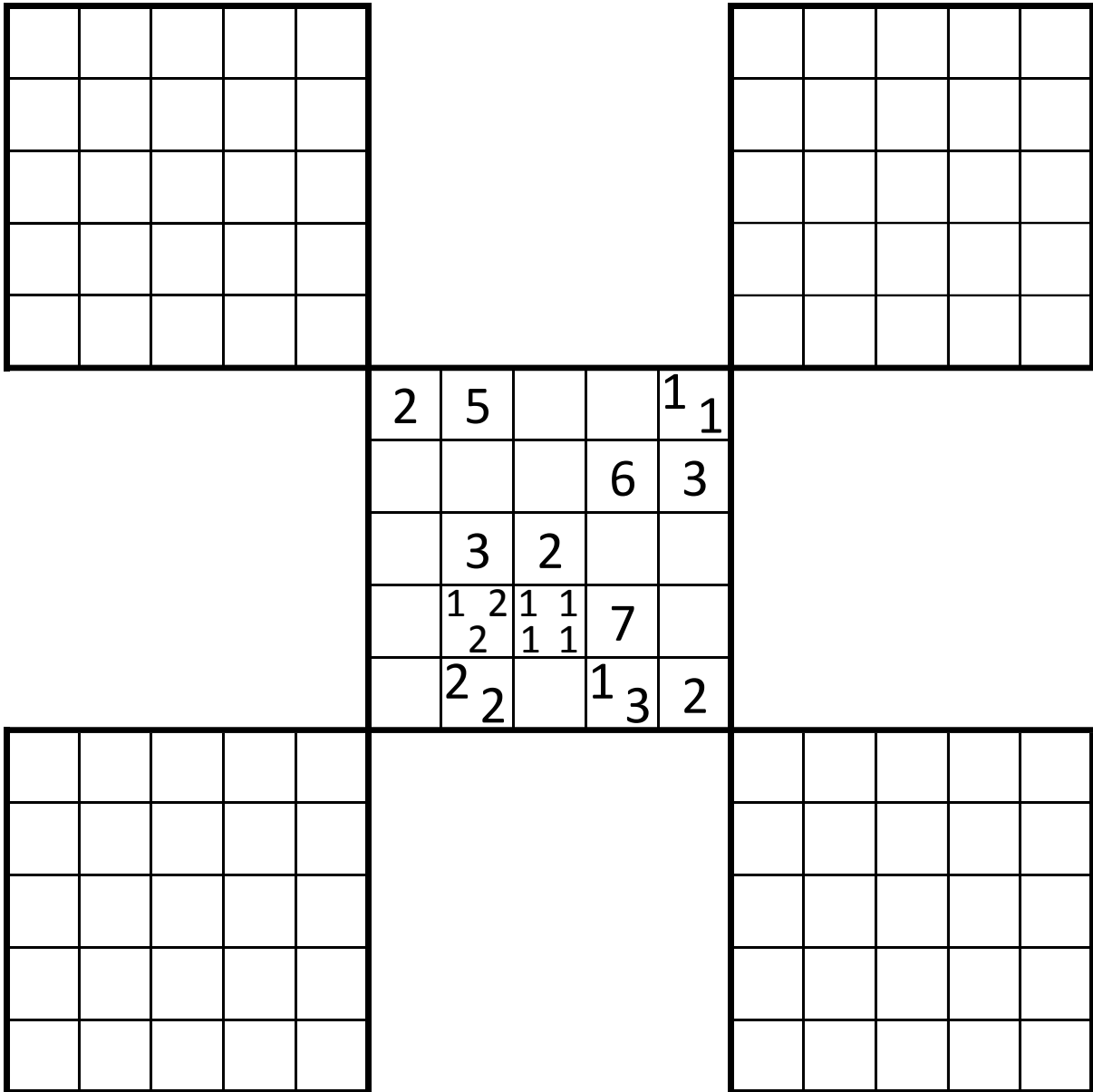
4. PENTOMINO 2 IN 1 (86 points)

Place the full set of pentominoes into each of the grids. Pentominoes can be rotated and mirrored but they cannot touch each other, not even diagonally. Numbers outside the grid indicate how many cells in the corresponding row/column are occupied by the pentominoes. The filled grid shows solutions of the both grids drawn over each other. Each cell that is shaded in the filled grid must be shaded in at least one of the grids. Each cell that is not shaded in the filled grid cannot be shaded in either of the bottom grids.



3. TAPA 4 IN 1 (124 points)

Shade some cells in the grids to create a continuous wall of shaded cells in each of the grids. Numbers in a cell indicate the lengths of consecutive shaded blocks in the cells neighbouring orthogonally and diagonally. If there is more than one number in a cell, there must be at least one white cell between the shaded blocks. Shaded cells cannot form a 2×2 square. Cells containing numbers cannot be shaded. The middle grid contains clues to four different tapa puzzles. Split the clues into four sets of clues. Each clue must belong to exactly one grid. Clues of different grids do not overlap. The coordinates (A1, A2, ...) will be provided outside each grid in the competition puzzle.





Round 7 – OUTSIDE THE BOX

Individual

Thursday 20th October 2016, 17:00 – 17:30

30 minutes – 15 puzzles – 360 points

1. DIGITAL SCALE	15 points
2. DIGITAL SCALE	38 points
3. MATCHING PAIRS	15 points
4. MATCHING PAIRS	15 points
5. MATCHING PAIRS	34 points
6. MAZE VIEW	5 points
7. MAZE VIEW	5 points
8. MAZE VIEW	5 points
9. MOVING MATCHES	15 points
10. TWO CLOCKS	20 points
11. TWO CLOCKS	44 points
12. TWO STEP MAZE	12 points
13. TWO STEP MAZE	52 points
14. WORDSEARCH	30 points
15. CRYPTARITHM	55 points

Please note that the order of puzzles has been changed – Cryptarithm will be the last puzzle of the set

15. CRYPTARITHM (55 points)

Replace letters by digits to get a valid set of mathematical equations. Different letters correspond to different digits while the same letters correspond to the same digits. Numbers must not start with a zero. The actual puzzle uses all ten digits (0-9). The sample below only uses digits 0-5.

(solution: R0 E1 S2 L3 T4 N5)

$$\begin{aligned} \text{EEL} + \text{TREE} &= \text{TEST} \\ \text{NET} \times \text{TEN} &= \text{SELLER} \end{aligned}$$

1. – 2. DIGITAL SCALE (15 + 38 points)

We have some apples, bananas, and cherries. The weight of each piece of fruit is a positive integer. All pieces of fruit of the same type weigh the same. We have weighed some combinations of fruit on a scale with a digital display. The scale always shows the exact weight, but its display is faulty: some segments that should be on remain off. In each puzzle, the faults are consistent between weighings. Determine the weight of each fruit type.

Example (with only two types of fruit):

$$\begin{aligned} 1 \text{ apple} + 4 \text{ bananas} &= \text{76} \\ 3 \text{ bananas} &= \text{89} \end{aligned}$$



Example solution: The weights shown on the displays must be '86' and '9' (note the absence of a leading zero). Hence, the weight of a banana is 3 and the weight of an apple is 74.

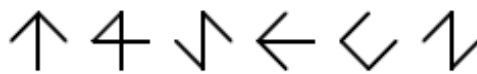
3. – 5. MATCHING PAIRS (15 + 15 + 34 points)

You will be given a set of objects. For this set, your task will be to find the following pairs and mark their positions given by their coordinates into the corresponding answer area allocated for each task.

3) Find two objects that are identical. (One can be obtained from the other by rotation and translation only.)

4) Find two objects that are mirror images. (One can be obtained from the other by flipping it once and then rotation and/or translation.)

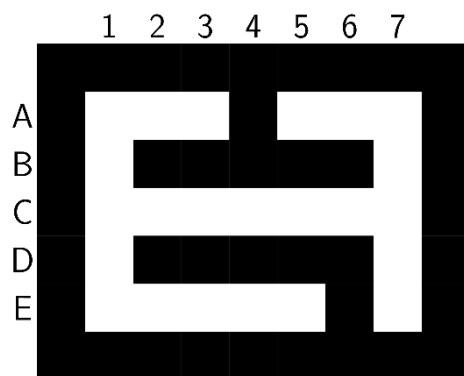
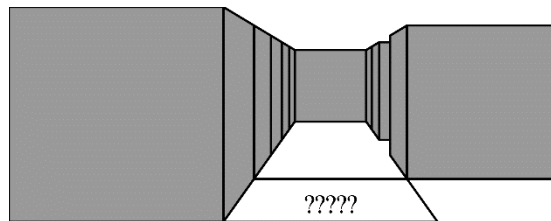
5) Find two objects that are complements of each other. In other words, they can be placed one on top of another (using only rotation and translation, no flipping) in such a way that together they form a complete picture – their vertices will coincide and each pair of vertices will be connected by a line in exactly one of the two objects.



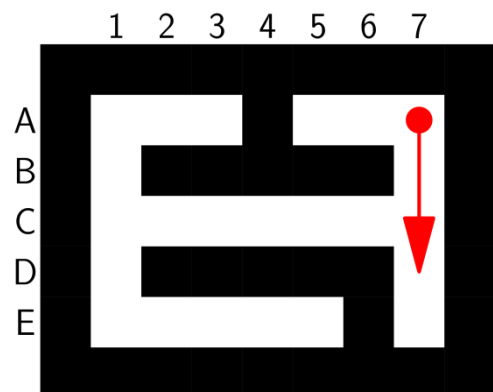
Answers: a) 1 + 4, b) 3 + 6, c) 2 + 5

6. – 8. MAZE VIEW (5 + 5 + 5 points)

Below is the map of a maze and a view seen by a person standing in the maze. On the view, one cell is marked with question marks. Find the location of the marked cell on the map. To be awarded the points for the puzzle, the correct coordinates of the positions have to be written into the area allocated for the corresponding view.



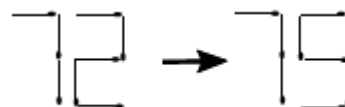
Solution: A7



9. MOVING MATCHES (15 points)

The figure below shows the ten decimal digits assembled from matchsticks. You are given a configuration of matchsticks. Move at most two matchsticks to produce the largest possible positive integer. (The integer must be written in base ten, using only the digits as shown below and nothing else. Rotating the whole configuration / changing the point of view is not allowed.)

1 2 3 4 5 6 7 8 9



10. – 11. TWO CLOCKS (20 + 44 points)

A 24-hour digital display can show any time between 00:00 and 23:59, inclusive. Digits used on the display look as follows:



Two digital clocks have been wired to one such display. Both clocks are going at the same pace but they are set to different times. The display now shows both times, one over another: a segment on the display is lit if at least one of the two displayed times uses that segment. For example, if one of the clocks shows 01:07 and the other shows 05:33, the display will show the following: **09:83**

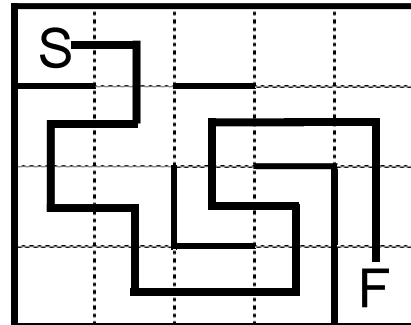
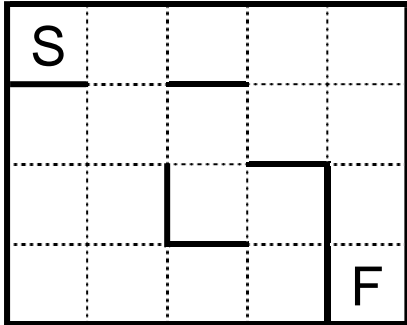
In each puzzle, you have a different pair of clocks. You are given several snapshots of the display, each taken at a different moment in time. Determine the difference between the times shown on the two clocks. (This difference is the same in each snapshot.) As the solution, express the difference in the form HH:MM, with the value being between 00:01 and 12:00, inclusive.



Solution: From these snapshots we can determine that the times shown on the two clocks differ by 00:03. The first display shows 07:44 and 07:47, the second 21:22 and 21:25.

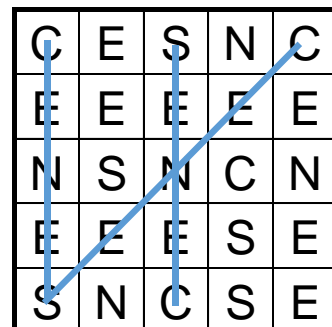
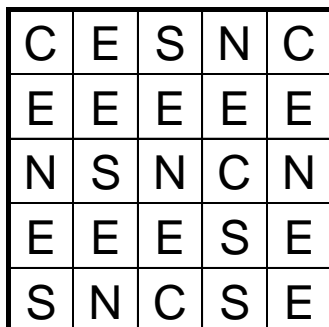
12. – 13. TWO STEP MAZE (12 + 52 points)

Find a way from the cell with S (as Start) to the cell with F (as Finnish). The path can only pass vertically or horizontally through the centres of some squares. Along your way, you may not enter any cell twice, and you may never make more than two consecutive steps in the same direction (you may pass straight through 3 cells at most). The way should not pass through the bold borders.



14. WORD SEARCH (10 + 10 + 10 points)

Find the three occurrences of the word SENE in the grid below. You may use any of the given 8 directions. 10 points will be given for each correctly marked word SENE. If more than 3 words are marked, you will earn 0 points.





Round 8 – OLDISH STYLE

Individual

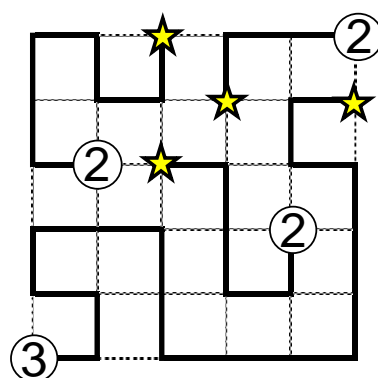
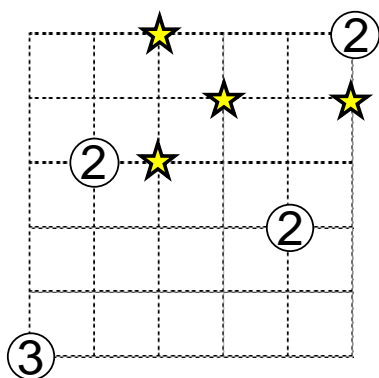
Thursday 20th October 2016, 17:45 – 18:30

45 minutes – 12 puzzles – 650 points

1. MAXIMAL LENGTHS	24 points
2. MAXIMAL LENGTHS.....	98 points
3. TRIMINO	30 points
4. TETROMINO	14 points
5. DOMINO DIVIDE	22 points
6. TRIMINO DIVIDE.....	103 points
7. SUM DIVIDE.....	92 points
8. RETRO PENTO.....	55 points
9. ALL OR NOTHING	37 points
10. COMET.....	16 points
11. MATH KAKURO	73 points
12. AREA NUMBERS.....	86 points

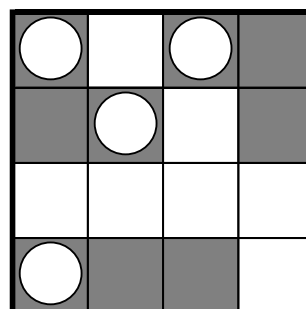
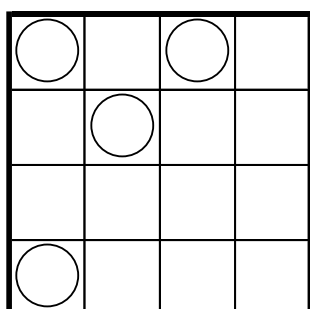
1. – 2. MAXIMAL LENGTHS (24 + 98 points)

Connect every circle with exactly one star by a path along the grid lines. The number in a circle indicates the lengths of the longest straight line of the path. All the intersections of the dotted lines must be visited exactly once. Each star must be connected to exactly one circle.



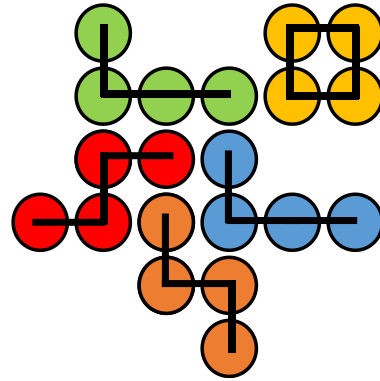
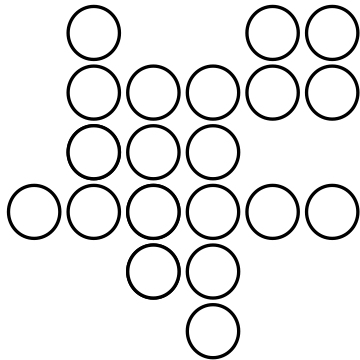
3. TRIMINO (30 points)

Shade some cells of the grid to create a number of triminoes. A trimino is a triplet of cells which are interconnected by their edges. No two triminoes can share an edge but they can touch each other by corners. Each of the given circles must be a part of a trimino.



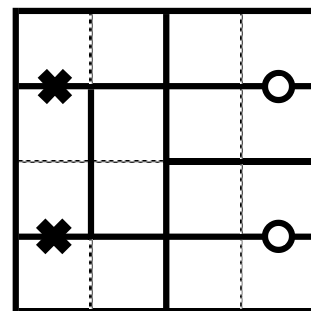
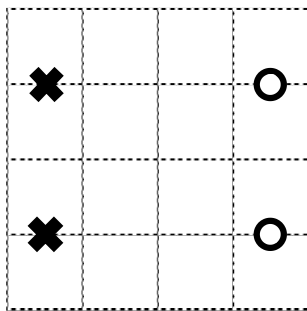
4. TETROMINO (14 points)

Divide all the circles into sets of four circles. The sets must be formed by circles that are adjacent either horizontally or vertically.



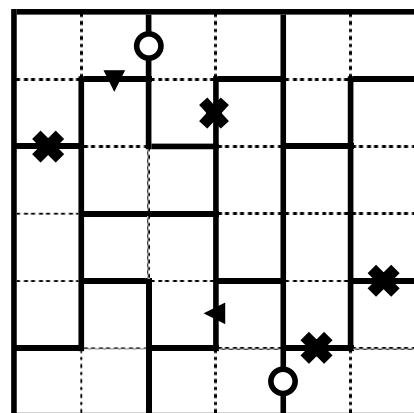
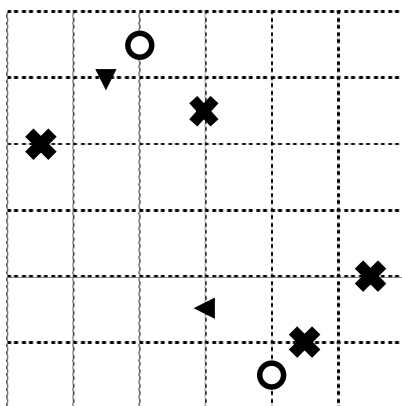
5. DOMINO DIVIDE (22 points)

Divide the grid along the given lines into dominoes. Each domino is formed by two orthogonally adjacent cells. When there is a cross between two dominoes, they must have different orientation. When there is a dot between two dominoes, they must have the same orientation. Symbols cannot lie inside of a domino.



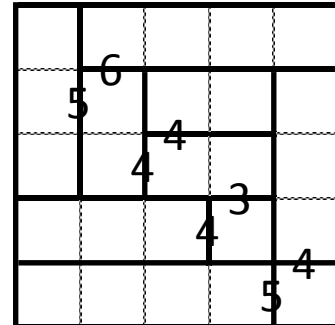
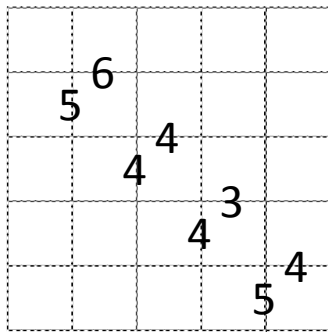
6. TRIMINO DIVIDE (103 points)

Divide the grid along the given lines into triminoes. Each trimino is formed by three orthogonally adjacent cells. When there is a cross between two triminoes, they must be of a different shape. When there is a triangle between two triminoes, they must be of the same shape, but different orientation. When there is a dot between two triminoes, they must be of the same shape and the same orientation. Symbols always lie on a trimino border, not inside a trimino.



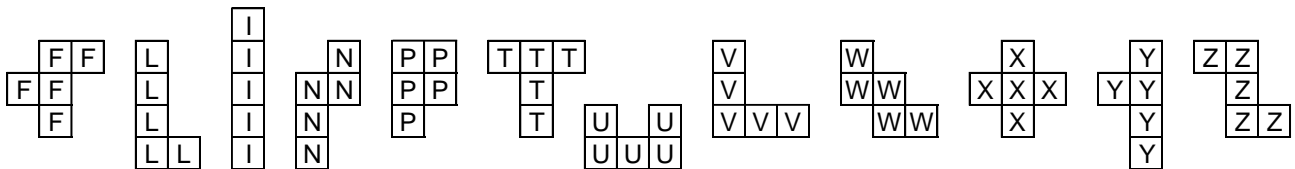
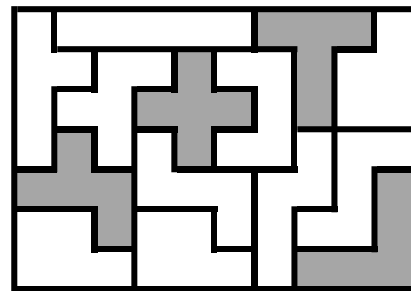
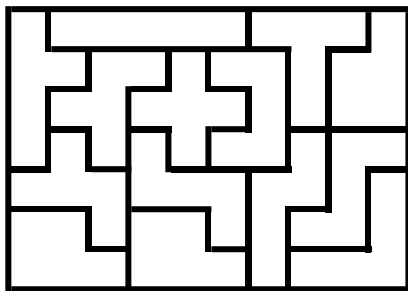
7. SUM DIVIDE (92 points)

Divide the grid along the given lines into some squares and rectangles. A number between two regions must be equal to the sum of the areas of these regions. Numbers always lie at borders, not inside the regions. There can be rectangles (squares) that do not touch any of given clues.



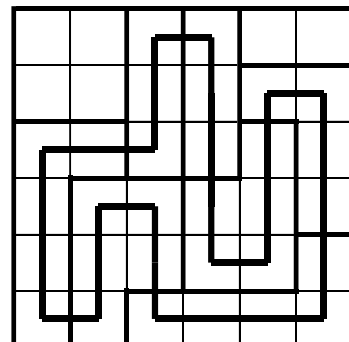
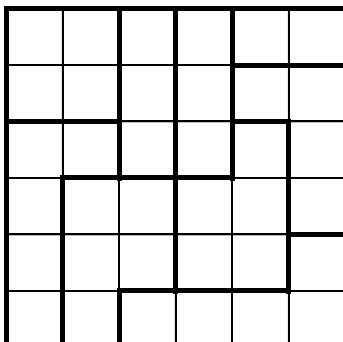
8. RETRO PENTO (55 points)

Locate the position of 12 different pentominoes (F, T, V, X in the example) in the grid. The pentominoes cannot touch each other, not even diagonally. The pentominoes may be rotated and/or mirrored. Each pentomino must be used exactly once in the grid. The borders of the pentominoes have already been given, your task is to choose the correct positions.



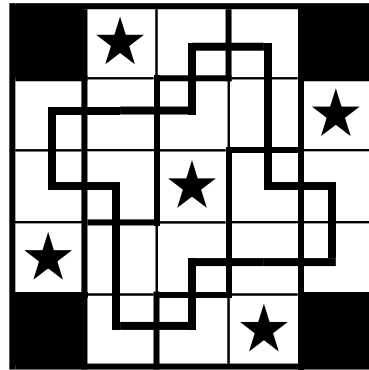
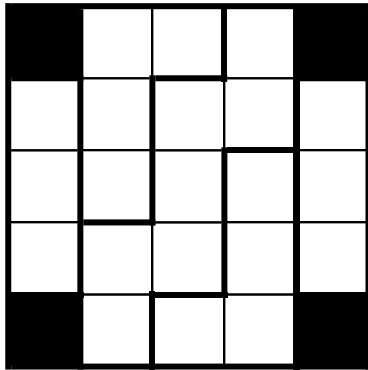
9. ALL OR NOTHING (37 points)

Draw a single closed loop that travels horizontally and vertically through the centres of some white cells. The loop cannot touch or cross itself. Every region must be visited by the loop at most once. When the loop enters a region, it must pass through all the cells of the region before leaving the region. No two unvisited cells belonging to distinct regions can touch each other orthogonally.



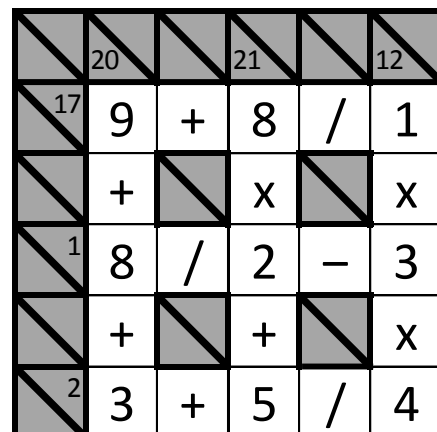
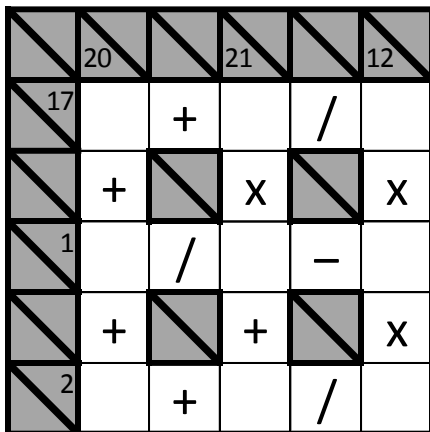
10. COMET (16 points)

Place some stars of size one cell into the grid so that there is exactly one star in every row, column and outlined region. Stars cannot touch each other, not even diagonally. Then draw a single closed loop passing through all the remaining white cells of the grid. The loop cannot touch or cross itself. There are no stars or loop segments in black cells.



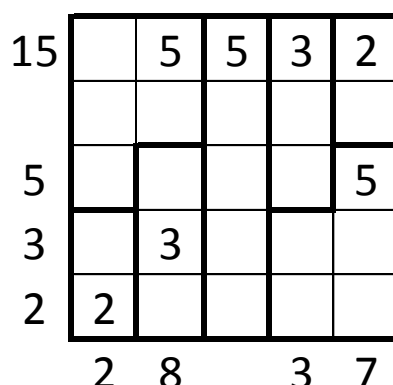
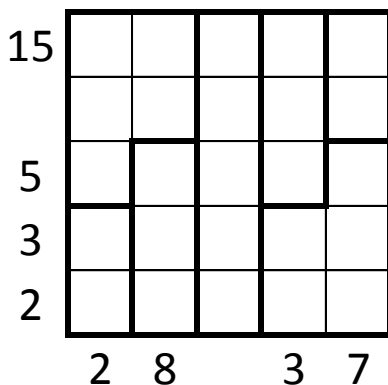
11. MATH KAKURO (73 points)

Fill in all empty white cells with numbers from 1 to 9 so that no digit is repeated within an equation. Numbers in grey cells are the results of these equations. There is no precedence of multiplication and division, the operations are always applied from left to right or from top to bottom.



12. AREA NUMBERS (86 points)

Place one number into every outlined region so that the number is equal to the area of the corresponding region. Numbers outside the grid indicate the sum of the numbers in the corresponding row or column.





Round 9 – CLASSICS

Individual

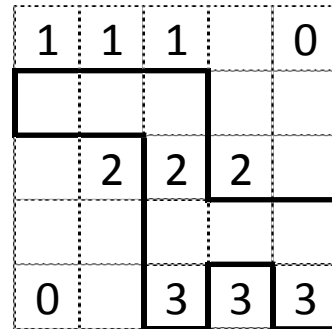
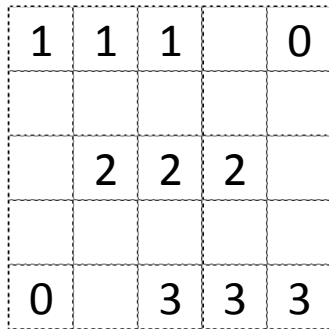
Friday 21st October 2016, 09:00 – 10:40

100 minutes – 28 puzzles – 1200 points

1. LOOPFINDER	21 points
2. LOOPFINDER	24 points
3. SKYSCRAPERS.....	10 points
4. SKYSCRAPERS.....	103 points
5. ARROWS	27 points
6. ARROWS	28 points
7. FENCES	14 points
8. FENCES	22 points
9. STARBATTLE	13 points
10. STARBATTLE	28 points
11. BATTLESHIPS	37 points
12. BATTLESHIPS	67 points
13. CAVE.....	56 points
14. CAVE.....	65 points
15. FILLOMINO	56 points
16. FILLOMINO	90 points
17. MINESWEEPER.....	15 points
18. MINESWEEPER	31 points
19. TAPA	58 points
20. TAPA	55 points
21. MAGNETS.....	32 points
22. MAGNETS.....	85 points
23. LITS.....	23 points
24. LITS	51 points
25. ANGLERS	28 points
26. ANGLERS	52 points
27. NURIKABE	32 points
28. NURIKABE	77 points

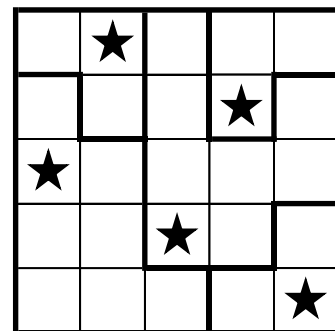
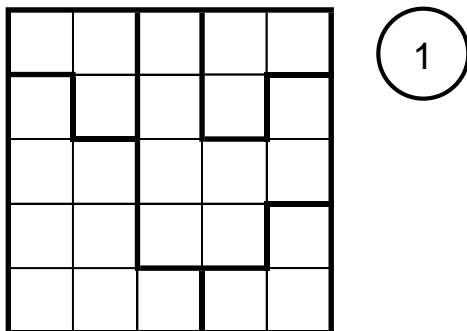
7. – 8. FENCES (14 + 22 points)

Draw a single continuous loop along the gridlines. A clue in a cell indicates how many edges of that cell are used for the loop. The loop may not touch or cross itself.



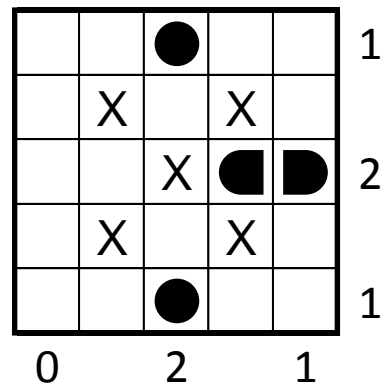
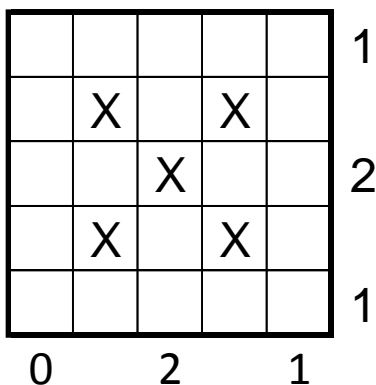
9. – 10. STARBATTLE (13 + 28 points)

Place some one-cell size stars into the grid so that each row, column and outlined area contains the given number of stars. The cells containing stars cannot touch each other, not even diagonally. The number of stars will be given in a circle next to the puzzle.



11. – 12. BATTLESHIPS (37 + 67 points)

Locate the given fleet in the grid. The ships cannot touch each other, not even diagonally. The ships may be rotated. The clues outside the grid indicate the number of ship segments in the corresponding row/column. If a cell is marked with X, then no segment of any ship can be placed in this cell.



13. – 14. CAVE (56 + 65 points)

Shade some cells in the grid to form a single orthogonally connected shape. All unshaded cells must be connected to the edge of the grid through orthogonally adjacent unshaded cells. All given numbers must be a part of the shaded shape. The given numbers indicate the number of cells inside the shape that can be seen from that cell, including the cell itself. Cells do not see past unshaded cells.

2				2
	3			
		4		
			5	
5				6

2		X	X	2
X	3	X		
		4		X
X	X	X	5	
5				6

15. – 16. FILLOMINO (56 + 90 points)

Divide the grid along the given lines into regions so that no two regions with the same area share an edge. Each given number must represent the area of the region it belongs to. A region may contain none, one, or more of the given numbers. Only the solutions that are consistent within the whole grid will be accepted. If all borders are marked it is enough, as well as if all digits are written.

	3	4	7	
		2		
	3	4	7	

3	3	4	7	7
3	4	4	4	7
1	2	2	1	7
3	4	4	4	7
3	3	4	7	7

17. – 18. MINESWEEPER (15 + 31 points)

Place some one-cell sized mines into the grid so that each number in the grid represents the number of mines in the diagonally or orthogonally neighbouring cells. Cells with numbers cannot contain mines and each cell can contain at most one mine.

1				
		3		3
3				
				2
	1	3		

1			●	●
●		3	●	3
3	●			
	●		●	2
	1	3	●	

19. – 20. TAPA (58 + 55 points)

Shade some cells in the grid to create an orthogonally connected region of shaded cells. Numbers in a cell indicate the lengths of consecutive shaded blocks in the cells neighbouring orthogonally or diagonally. If there is more than one number in a cell, there must be at least one white cell between each two shaded blocks. Shaded cells cannot form a 2x2 square. Cells containing numbers cannot be shaded.

	1 3				0		
							2
1 3							
			1 3 3				
			1 2 1				
							4
1 2							
		4					5

	1 3				0		
							2
1 3							
			1 3 3				
			1 2 1				
							4
1 2							
		4					5

21. – 22. MAGNETS (32 + 85 points)

Place some magnets into the given grid so that the number of positive and negative poles in each row or column is equal to the number given outside the corresponding row or column. Each magnet consists of one positive and one negative pole. The poles with the same charge cannot touch each other orthogonally.

				2	1
				0	2
				1	1
				1	0
1	2	0	1	+	
1	1	1	1	-	

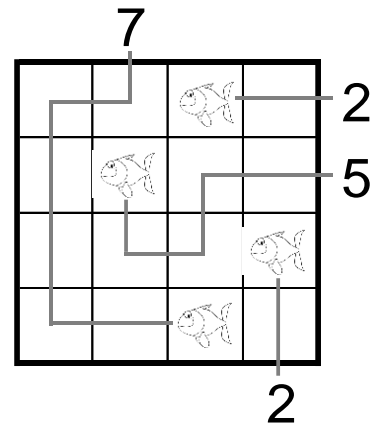
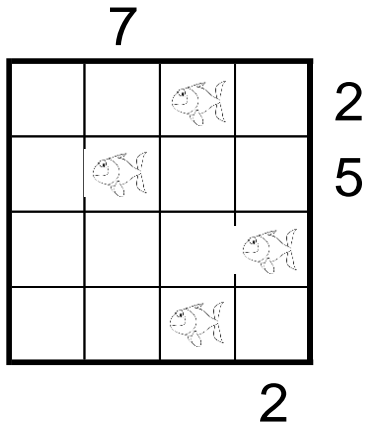
	+	-	+	2	1
	-		-	0	2
-	+			1	1
+				1	0
1	2	0	1	+	
1	1	1	1	-	

23. – 24. LITS (23 + 51 points)

Shade 4 cells in each of the outlined regions so that they are orthogonally connected within each region, forming the shape of one of the letters L, I, T or S. Identical pieces may not touch each other orthogonally. The shapes can be rotated and/or mirrored, but they are still considered the same shape. All the shaded cells must be interconnected. Shaded cells cannot form a 2x2 square.

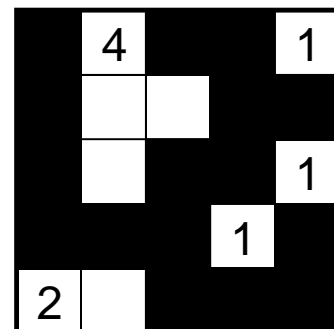
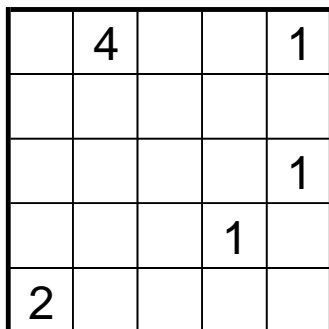
25. – 26. ANGLERS (28 + 52 points)

The grid represents a lake and some squares contain a fish. There are a few anglers sitting around the lake, each of whom have caught a fish. The cords only travel horizontally or vertically and do not cross or overlap themselves or each other. Numbers outside the grid indicate the lengths of the cords that connect the given anglers with their fish, including the cell with the fish. Each cell belongs to exactly one cord. Each fish have been caught by exactly one angler.



27. – 28. NURIKABE (32 + 77 points)

Shade some empty cells so that the grid is divided into white areas, each containing exactly one number and with the same area in cells as that number. Two white areas may only touch diagonally. All black cells must be orthogonally connected with each other, but no 2x2 group of cells can be entirely shaded.





Round 10 – MYOPIA

Individual

Friday 21st October 2016, 11:00 – 11:35

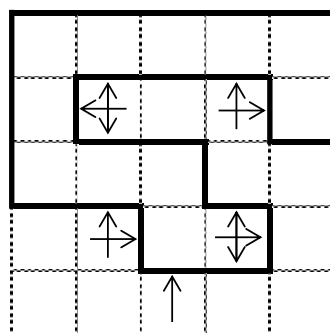
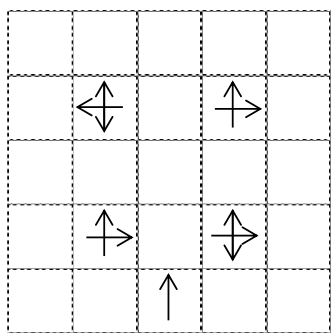
35 minutes – 7 puzzles – 350 points

- 1. MYOPIA45 points
- 2. PENTOPIA33 points
- 3. EASY AS ABCD65 points
- 4. SCRABBLE59 points
- 5. BATTLESHIPS26 points
- 6. MASYU78 points
- 7. STARBATTLE44 points

In this round, arrows will be given in each grid. If an arrow points in one of the four directions, it means that the object from the puzzle (loop, battleship, etc.) is the closest to the cell with the arrow in this direction. If an arrow does not point in a direction, the object cannot be the closest in this direction. Each arrow must point at at least one of the defined objects.

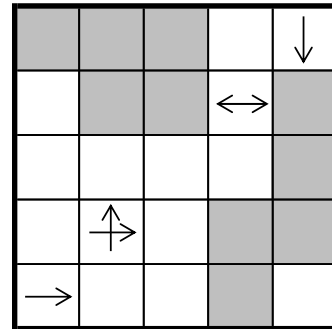
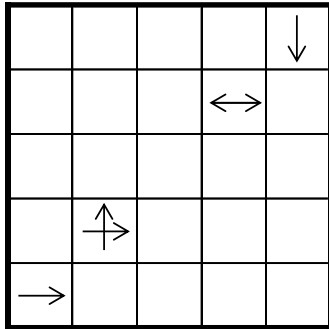
1. MYOPIA (45 points)

Draw a single closed loop that travels horizontally and vertically through some of the white cells. The loop cannot touch or cross itself. The arrows point at the closest loop segment in the corresponding direction.



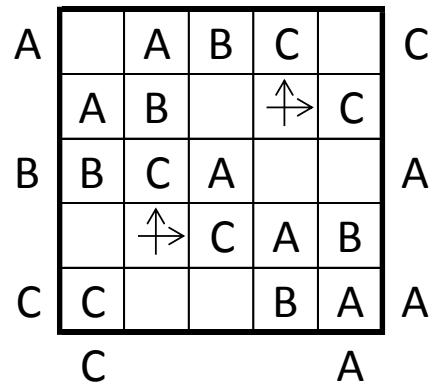
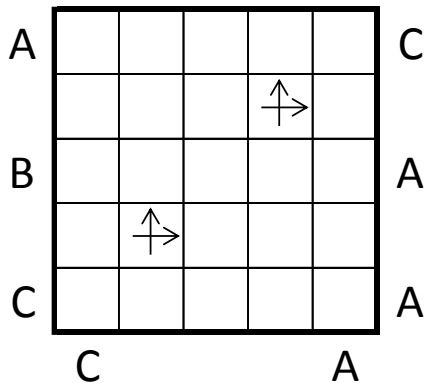
2. PENTOPIA (33 points)

Place some of the given pentominoes (P and N in the example) in the grid so that they do not touch each other, not even diagonally. The arrows point at the closest cell occupied by a pentomino in the corresponding direction. The pentomino set will be given next to the puzzle. The shapes can be rotated and/or mirrored. Each pentomino can be placed into the grid at most once. No cell containing an arrow can be a part of a pentomino.



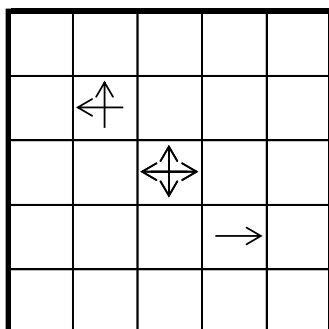
3. EASY AS ABCD (65 points)

Place the numbers A, B, C, D (A, B, C in the example) into the grid so that no number is repeated in any row or column. Some cells will remain empty. The numbers outside the grid indicate the first letter visible in the corresponding row or column. The arrows point at the closest cell with a letter in the corresponding direction. The cells with arrows are considered invisible and no letter can be placed in a cell with an arrow.

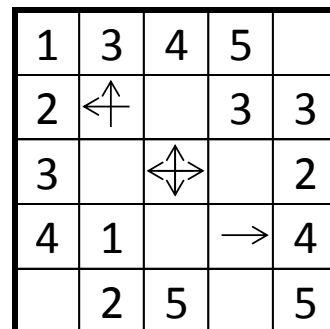


4. SCRABBLE (59 points)

Place all the given words (numbers) from the given list into the grid so that each word can be read from left to right or from top to bottom exactly once. All words must be orthogonally connected. Words that are not on the list cannot appear in the grid (not even a two-digit number). The arrows point at the closest cell with a letter in the corresponding direction. No number can be placed in a cell already containing an arrow.

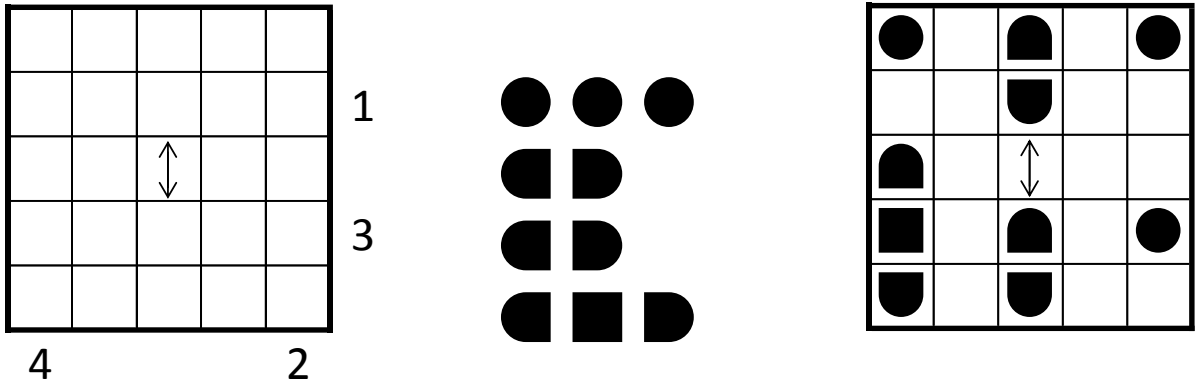


- 1234 25
- 1345 33
- 3245 41
- 12 53



5. BATTLESHIPS (26 points)

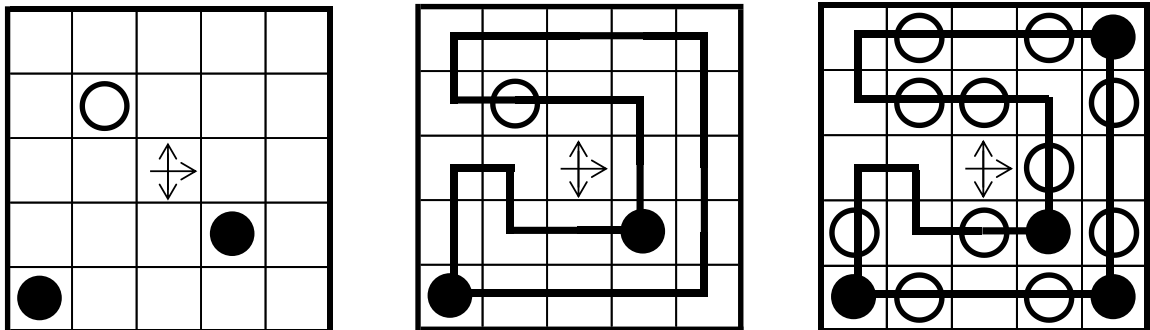
Locate the given fleet in the grid. The ships cannot touch each other, not even diagonally. The ships may be rotated. The arrows point at the closest battleship segment in the corresponding direction. No part of a ship can be placed in a cell already containing an arrow.



6. MASYU (78 points)

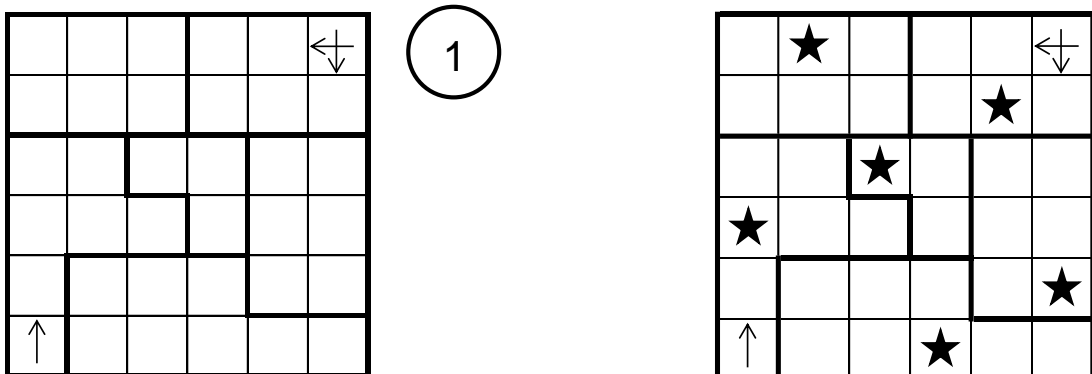
Draw a single loop that travels horizontally and vertically between cell centres and that passes through each circle, but not through cells with arrows. It goes straight through white circles, but turns in the previous or the following cell (or both). It turns in black circles, but goes straight through both the previous and the following cell.

Then place black and white circles on the loop wherever they would be valid according to the rules for given circles. Then the arrows are valid Myopia clues for circles: Every arrow points at some circle (given or just added), all arrows in a cell have the same distance to the next circle they point to, and for any directions without an arrow, the closest circle (if any) is further away. It is not needed to draw the circles in order to be awarded the points for the puzzle.



7. STARBATTLE (44 points)

Place some stars into the grid so that each row, column and outlined area contains the given number of stars. The number of stars will be given next to the grid in a circle. The stars cannot touch each other, not even diagonally. The arrows point at the closest star in the corresponding direction. No star can be placed in a cell already containing an arrow.





Round 11 – NEWISH STYLE

Individual

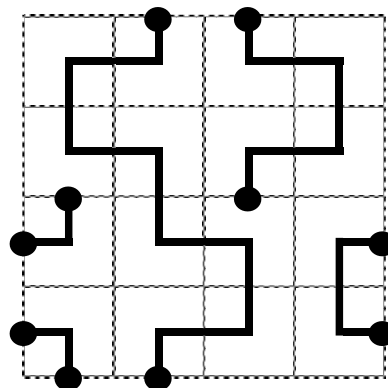
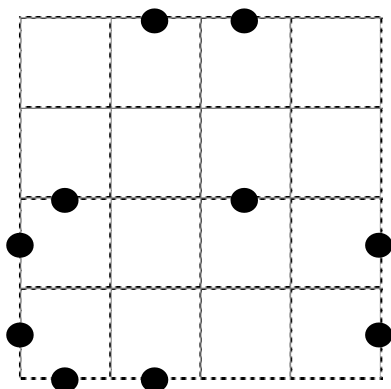
Friday 21st October 2016, 11:50 – 12:35

45 minutes – 16 puzzles – 650 points

1. RAILROADS	8 points
2. RAILROADS	8 points
3. RAILROADS	30 points
4. RAILROADS	52 points
5. SKYSCRAPERS LTD.....	32 points
6. SKYSCRAPERS LTD.....	46 points
7. LAMPS	26 points
8. LAMPS	80 points
9. ILLITERATE LOOP	37 points
10. TRIPOD CORRAL	14 points
11. TRIPOD CORRAL	33 points
12. OASIS	29 points
13. OASIS.....	90 points
14. REVERSE MASYU	33 points
15. REVERSE MASYU.....	40 points
16. FENCES SWITCH.....	92 points

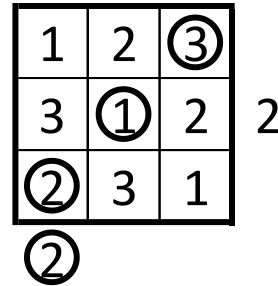
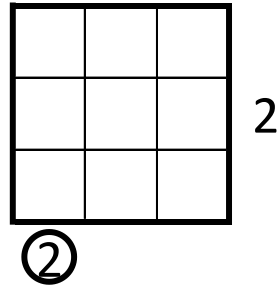
1. – 4. RAILROADS (8 + 8 + 30 + 52 points)

Place the given pieces into each cell of the grid, so that each piece appears exactly once in each row and column. Every “blind end” of a line (an edge which is not connected to another line) is marked with a circle.



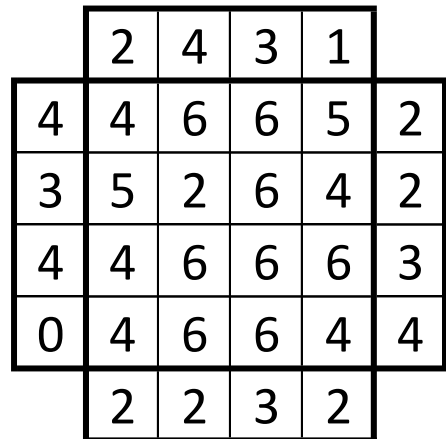
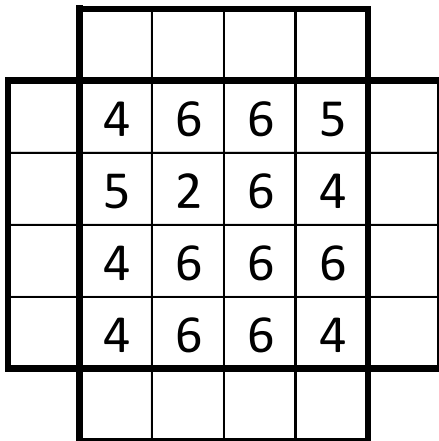
5. – 6. SKYSCRAPERS LTD. (32 + 46 points)

Fill the whole grid with numbers 1 to N according to Skyscrapers rules. Additionally, exactly N of the buildings (marked by circles) are owned by the *Skyscrapers Ltd. corporation*. No two *Skyscrapers Ltd.* buildings are in the same row, the same column, or have the same height. Number outside the grid in a circle means that an *Skyscrapers Ltd.* building must be visible from that direction. A number outside the grid without a circle means that an *Skyscrapers Ltd.* building must not be visible from that direction. It is not needed to circle the *Skyscrapers Ltd.* buildings in order to be awarded the points for the puzzle.



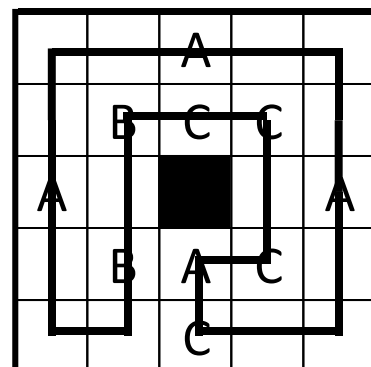
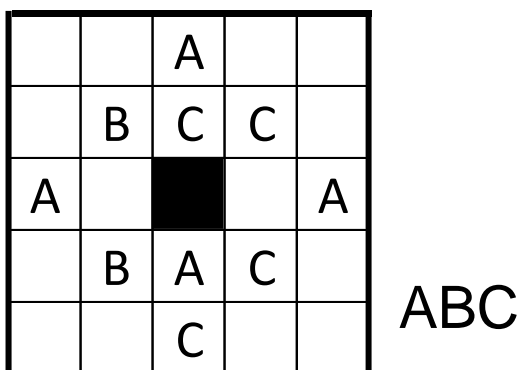
7. – 8. LAMPS (26 + 80 points)

Find out the intensity of every lamp that is located in every empty cell outside the grid. Some lamps may have zero intensity. Other lamps shine into the grid in one horizontal or vertical and two diagonal directions. The intensity of the lamp is given by its number (integer from 0 to the N where N is the inner size of the grid) and it indicates the number of cells lit by the lamp in each direction. Numbers given in the grid indicate how many lamps shine at the corresponding cell.



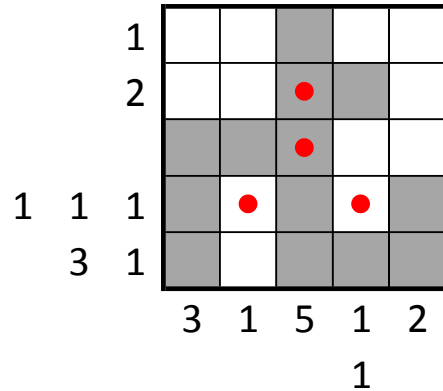
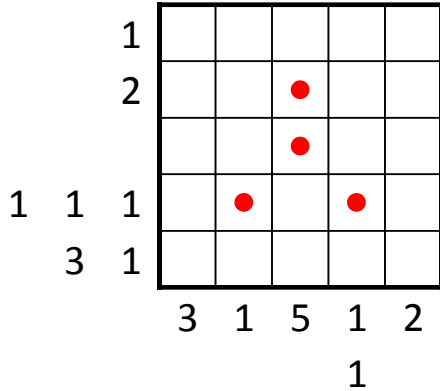
9. ILLITERATE LOOP (37 points)

Draw a single closed loop that travels horizontally and vertically through the centres of all white cells. The loop cannot touch or cross itself. Given is a set of letters which can never be consecutive along the loop. In this example none of these sequences can appear within the loop: ABC, ACB, BAC, BCA, CAB, CBA. (In other words – the letters along the loop are never an anagram of the given word.)



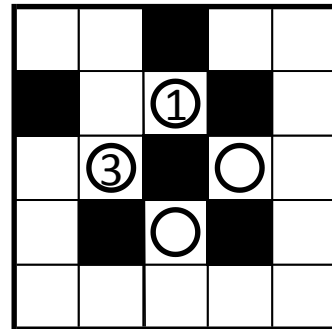
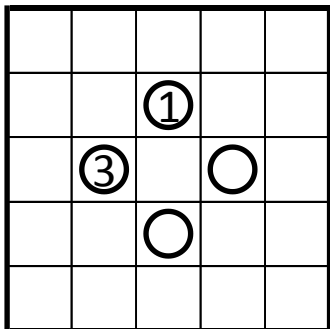
10. – 11. TRIPOD CORRAL (14 + 33 points)

Shade some cells in the grid. All shaded cells must be orthogonally interconnected. All unshaded cells must be orthogonally connected to the edge of the grid. Shaded cells can never form a 2x2 square. Numbers outside the grid indicate the lengths of all blocks of shaded cells in the corresponding row or column, not necessarily in the given order. Each cell that has exactly three shaded orthogonally adjacent cells is marked with a circle.



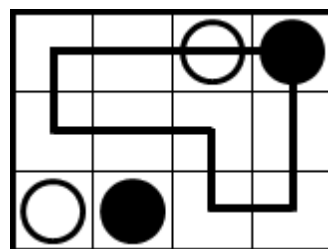
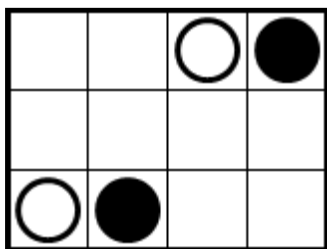
12. – 13. OASIS (29 + 90 points)

Shade some cells in the grid. Shaded cells cannot touch each other orthogonally. All unshaded cells must be orthogonally interconnected. Unshaded cells cannot form a 2x2 square. Cells with circles cannot be shaded. A number indicates how many other numbers or circles can be reached from that cell by passing only orthogonally through empty unshaded cells (it cannot pass a shaded cell nor a cell with a number / circle).



14. – 15. REVERSE MASYU (33 + 40 points)

Draw a single, non-intersecting loop that passes through the centres of all the empty cells but not necessarily through all circled cells. If the loop passes through a white circle, it must go straight through that circle, with a turn in at least one of the cells immediately before/after the circle. If the loop passes through a black circle, it must make a turn in circle, but must go straight in both cells immediately before/after the circle.



16. FENCES SWITCH (92 points)

Draw a single continuous loop using the gridlines. A clue in a cell indicates how many edges of that cell are used for the loop. The loop may not touch or cross itself. Every number in the grid must switch its position with one of its orthogonal neighbours. There can be more ways how the pairs of numbers switch their positions but the loop has only one unique solution. Two grids will be provided to you in the Puzzle Booklet. You may use any of them to draw the loop. You do not need to write the digits.

Puzzle:

		2	2	
2	2	2	2	
2	2		1	1
	3	3	1	1
	3	3		

Solution:

		2	2	
2	2	2	2	
2	2		1	1
	3	3	1	1
	3	3		

		2	2	
2	2	2	1	
2	3		2	1
	2	1	3	1
	3	3		



Round 12 – ASSORTED

Individual

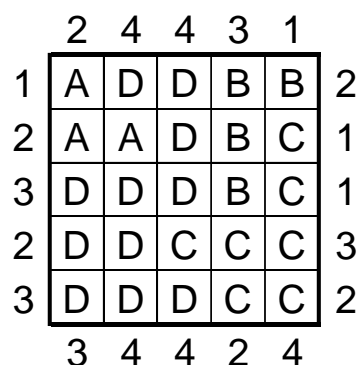
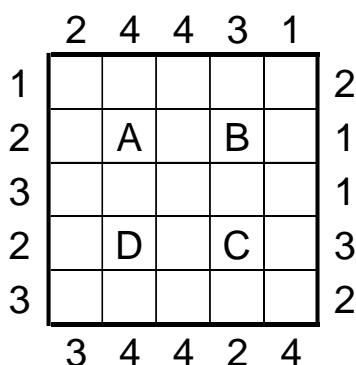
Friday 21st October 2016, 14:10 – 15:25

75 minutes – 25 puzzles – 900 points

1. COUNTRIES	48 points
2. SANDWICH	50 points
3. NUMBERLINK	34 points
4. HEXA WORDS	86 points
5. NEIGHBOURS	64 points
6. HITORI	35 points
7. ELASTIC BANDS	101 points
8. SNAKE	38 points
9. MAGIC SQUARE	26 points
10. BRIDGES	20 points
11. STARBATTLE	24 points
12. CODED SKYSCRAPERS	30 points
13. FOUR SNAILS	22 points
14. SLASH PACK	42 points
15. DOMINO	26 points
16. ALTERNATE TAPA	30 points
17. CAPSULES	18 points
18. EASY AS ABC	25 points
19. CLIMBERS	18 points
20. BACA	22 points
21. DOMINION	20 points
22. GEMINI LOOP	18 points
23. ZIG-ZAG	59 points
24. CURVE DATA	11 points
25. ABC DIVISION	33 points

1. COUNTRIES (48 points)

Divide the grid into few connected areas so that each area contains at least one of the given letters. Each area contains all occurrences of the same letter in the grid. Numbers outside the grid indicate the number of cells in the corresponding row or column which belong to the area touching to the grid edge at this point. Each area must touch the edge of the grid.



2. SANDWICH (50 points)

Place the given letters (WPC in the example) into the grid so that each row and column contains each letter exactly once. Blacken two cells in every row and column. One cell will remain empty in each row and each column. Clues outside the grid indicate all the letters between two black cells in the corresponding row or column in the correct order.

PW P W C P WCP

						WPC
		W				W
			C			C
						C
						PW

PW P W C P WCP

■	W		P	C	■	WPC
P	C	■		■	W	
	■	W	■	P	C	W
W	P	■	C	■		C
■		C	■	W	P	C
C	■	P	W		■	PW

3. NUMBERLINK (34 points)

Connect each pair of same letters using only horizontal or vertical lines passing through the centres of cells. Lines should not intersect or cross each other. All centres of squares must be used. No connection of two letters can pass through a square formed of 2x2 cells.

1					
			2		
	2			1	

1					
			2		
	2			1	

4. HEXA WORDS (86 points)

Fill in the whole grid with letters. Six hexagonal cells around each grey cell must contain one of the words from the given list (in any order). Each word should be used exactly once.

KITTEN
RAVENS
TIGERS

5. NEIGHBOURS (64 points)

Fill in the whole grid with the given letters so that each of the given letters appears exactly once within a row or a column. Letters outside the grid must appear in the corresponding row or column in given order without gaps.

	WPC	PS	SP	SC
WPC				
SW				
CW				
PW				

Letters: WSPC

	WPC	PS	SP	SC
WPC	W	P	C	S
SW	P	S	W	C
CW	C	W	S	P
PW	S	C	P	W

6. HITORI (35 points)

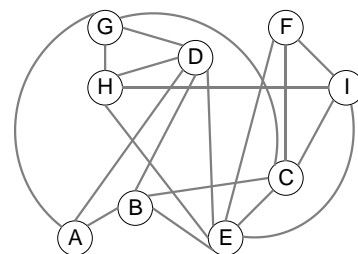
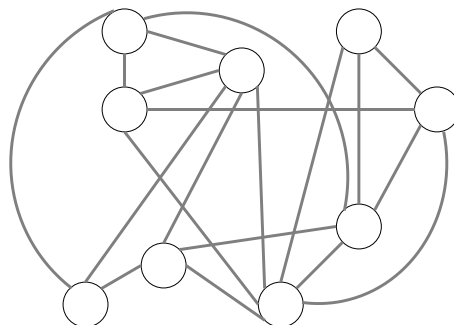
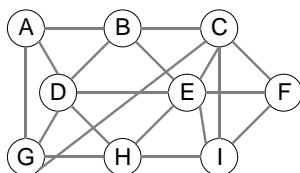
Shade some cells in the grid so that no letter (number in the example) is repeated within a row or a column. Shaded cells cannot touch each other orthogonally. Unshaded cells must be orthogonally interconnected.

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

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

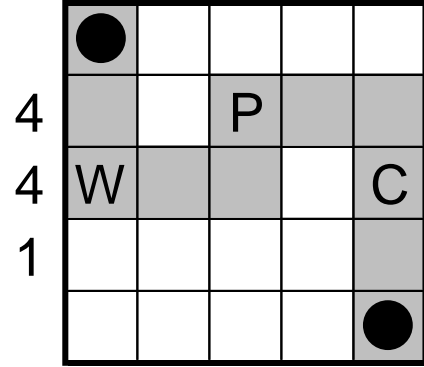
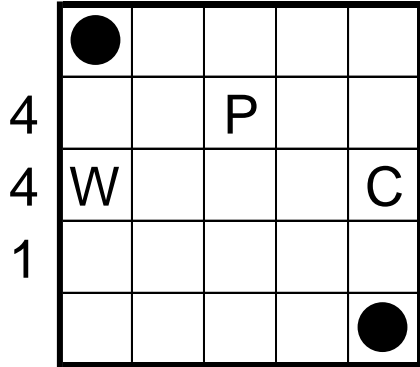
7. ELASTIC BANDS (101 points)

Place the letters from the first diagram into the circles of the second diagram so that letters connected in the left diagram are connected in the right diagram as well (each symbol must have exactly the same connections in both diagrams).



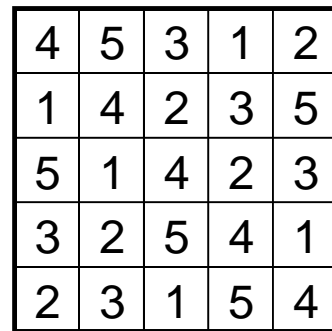
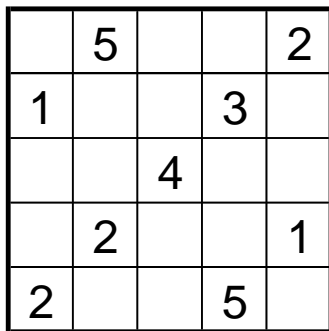
8. SNAKE (38 points)

Place a one-cell-wide snake into the grid so that it does not touch itself, not even diagonally. The head of the snake is in the top left cell of the grid and the tail is in the bottom right cell. Numbers outside the grid indicate how many cells in that row or column are occupied by the snake. All the given letters must be part of the snake's body and must appear in the given order (from head to tail). For the example the password is WPC.



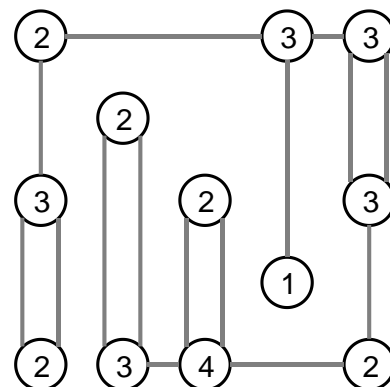
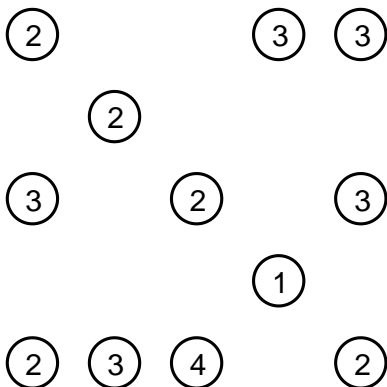
9. MAGIC SQUARE (26 points)

Fill in the whole grid with the given letters (numbers 1,2,3,4,5 in the example) so that no letter is repeated within any row or a column.



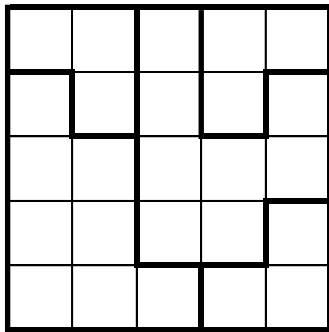
10. BRIDGES (20 points)

Connect all the given islands with horizontal or vertical bridges. The number in each island indicates the number of the bridges leading from that island. Bridges cannot cross each other. Each two islands can be connected by at most two bridges.

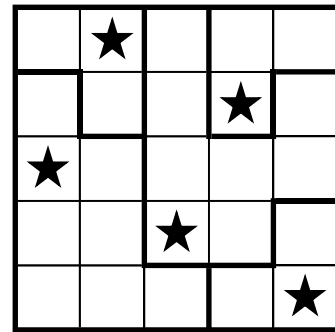


11. STARBATTLE (24 points)

Place some one-cell-sized stars into the grid so that each row, column and outlined area contains the given number of stars. The number will be given in a circle next to the puzzle. The stars cannot touch each other, not even diagonally.



1



12. CODED SKYSCRAPERS (30 points)

Place a number from 1 to 6 (1-5 in the example) into each cell so that each digit appears exactly once in a row or a column. Each number in the grid represents the height of a skyscraper. The clues outside of the grid indicate how many skyscrapers can be seen when looking from the corresponding direction. Higher skyscrapers block the view of smaller ones. In this puzzle, the numbers have been replaced with letters. The same numbers have been replaced with the same letters. Different numbers have been replaced with different letters.

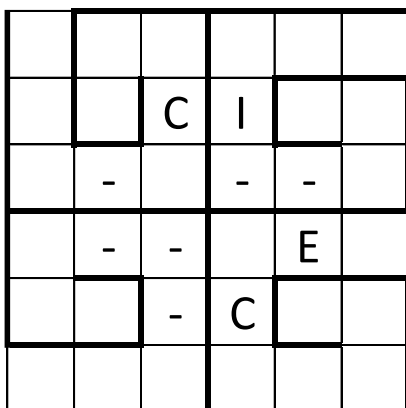
	B	A	D	B	A	
B						A
D						C
B						A
B						D
C						B
	A	A	A	D	B	

	B	A	D	B	A	
B	3	1	5	4	2	A
D	5	4	2	3	1	C
B	2	5	4	1	3	A
B	4	3	1	2	5	D
C	1	2	3	5	4	B
	A	A	A	D	B	

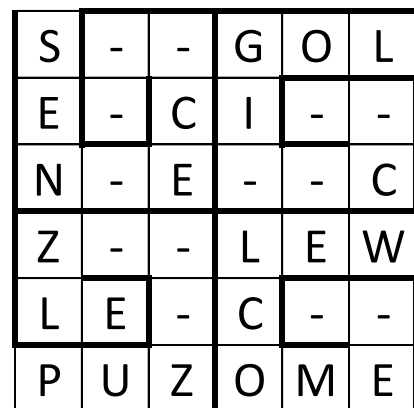
D	1
B	2
A	3
C	4

13. FOUR SNAILS (22 points)

Write the names from the list along the snails, in the order from outside towards the middle. The same letter can not appear more than once in any row or column. A "-" sign means there is no letter in the cell. Some letters are already given in the example.



SENEC
LOGIC
PUZZLE
WELCOME



14. SLASH PACK (42 points)

Divide the grid into shapes, using only the diagonals of the squares, without any loose ends. Each shape must contain all the given letters (ABCD in the example) as many times as they are stated. Two diagonals cannot cross in one square.

A		A	D
	B		C
	C		B
	D		

A		A	D
	B		C
	C		B
	D		

15. DOMINO (26 points)

Find the whole set of dominoes (0-0 to 3-3 in the example, set of letters in the competition puzzle) by dividing the grid into orthogonally connected areas. Each area contains exactly two cells. Black cells are not a part of any domino. The domino set will be given next to the puzzle.

	2	2	1	
0	0	3	2	0
3	2	3	1	1
0	1	1	3	2
3				0

	2	2	1	
0	0	3	2	0
3	2	3	1	1
0	1	1	3	2
3				0

16. ALTERNATE TAPA (30 points)

Shade some cells to create an orthogonally connected region of shaded cells. Numbers in a cell indicate the lengths of consecutive shaded blocks in the cells neighbouring orthogonally and diagonally. If there is more than one number in a cell, there must be at least one white cell between each two shaded blocks. Shaded cells cannot form a 2x2 square. Cells containing clues cannot be shaded. For each set of identical letters, only one is visited by the wall and the others are not.

	1 3			0		
		A	A	A		2
1 3						
D	D		1 3	3		C C
			1 2	1		
			B	B	B	4
1 2						
		4				5

	1 3			0		
		A	A	A		2
1 3						
D	D		1 3	3		C C
			1 2	1		
			B	B	B	4
1 2						
		4				5

20. BACA (22 points)

Place the given letters into the grid so that every row and column contains each letter exactly once. Shade all the remaining cells. The numbers outside of the grid indicate the lengths of the shaded blocks in the corresponding row or column in the correct order. The given letters may be shaded. The letters outside of the grid indicate the first visible letter in the corresponding row or column.

		1	1			
	2	1	1	2	2	
1	1					C
1	1	W	P	C		W
1	1	W	W	P	C	P
	2	P		W	P	
1	1	C				

Letters: WPC

		1	1			
	2	1	1	2	2	
1	1		W		P	C
1	1		P	C	W	
1	1	W		P	C	
	2	P	C			W
1	1	C		W		P

21. DOMINION (20 points)

Divide the grid into some regions formed of adjacent squares, with using dominoes (1×2 black cells). Dominoes cannot overlap or touch each other by the sides. Each region must contain only the same letters and at least one letter. All the identical letters have to be in the same region.

W				C
			C	
P				
			W	

W				C
			C	
P				
			W	

22. GEMINI LOOP (18 points)

Draw a single closed loop that consists of horizontal and vertical segments passing through the centres of all squares. Cells with identical letters must contain identical loop segments, cells with different letters different loop segments. The direction of the loop is not considered – i.e. the loop may pass through cells with identical letters from left to right the first time and from right to left another time.

C			C
	A	B	
A			B

C			C
	A	B	
A			B

23. ZIG-ZAG (59 points)

Draw a path from the top-left corner to the bottom-right corner that consists of horizontal, vertical and diagonal segments connecting the centres of all cells. The path cannot touch, overlap or cross itself. Along the path, the order of the letters encountered is the repetition of the given password (SENEC in the example). The password will be given next to the grid.

S	E	E	N	E
E	N	S	C	S
C	C	E	N	E
E	S	C	E	N
N	E	S	E	C

Password: SENECS

S	E	E	N	E
E	N	S	C	S
C	C	E	N	E
E	S	C	E	N
N	E	S	E	C

24. CURVE DATA (11 points)

Make some figures by drawing vertical or horizontal lines passing through the centres of cells so that each figure goes through exactly one clue. All the cells must be visited by lines. Each clue shows how the lines of the figure upon it turn or connect without any rotation or reflection. The clues do NOT imply lengths of any part of the line. Different figures must not share same cells.

C	+			
			U	
U		U		

C	+			
			U	
U		U		

25. ABC DIVISION (33 points)

Divide the grid along the given lines into regions so that each region contains each letter from the given word (in example the word is AABC) as many times as it is stated. Each cell of the grid must belong to exactly one region.

B	A	B	B
B	C	A	C
A	A	A	A
C	A	C	A

Word: AABC

B	A	B	B
B	C	A	C
A	A	A	A
C	A	C	A



Round 13 – IRREGULAR CLASSICS

Individual

Friday 21st October 2016, 15:40 – 16:20

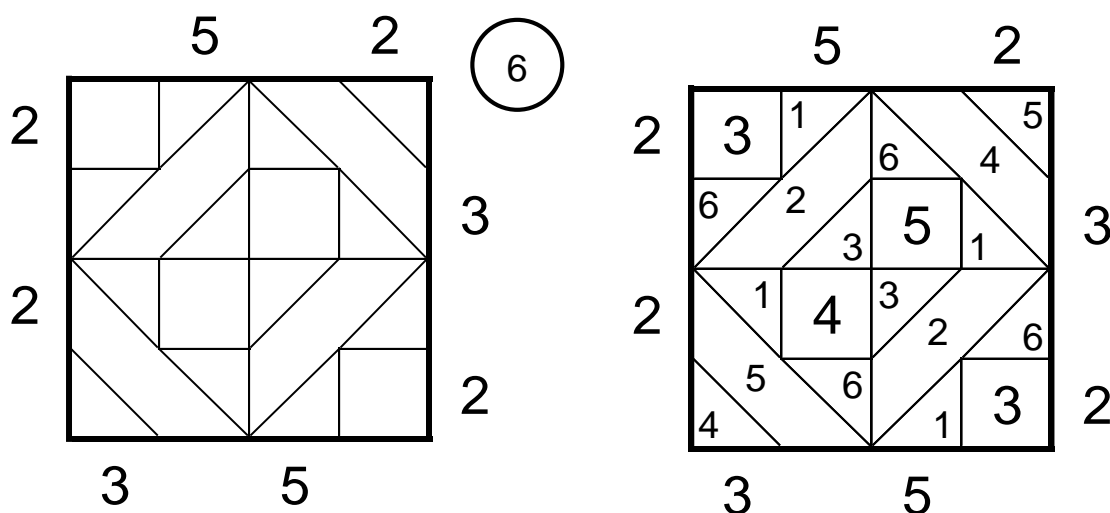
40 minutes – 11 puzzles – 500 points

1. IRREGULAR SKYSCRAPERS	21 points
2. IRREGULAR SKYSCRAPERS	33 points
3. IRREGULAR SKYSCRAPERS	45 points
4. IRREGULAR EASY AS ABC	49 points
5. IRREGULAR EASY AS ABC	53 points
6. IRREGULAR HITORI	38 points
7. IRREGULAR HITORI	44 points
8. IRREGULAR FILLOMINO	52 points
9. IRREGULAR FILLOMINO	45 points
10. IRREGULAR KAKURO	38 points
11. IRREGULAR KAKURO	82 points

In this round, you will be solving classic puzzles. The only difference is that they will be irregular, meaning that some cells will be bigger – they will belong to more than one row or column – or smaller. Otherwise the rules are exactly the same as in the normal versions of these puzzles.

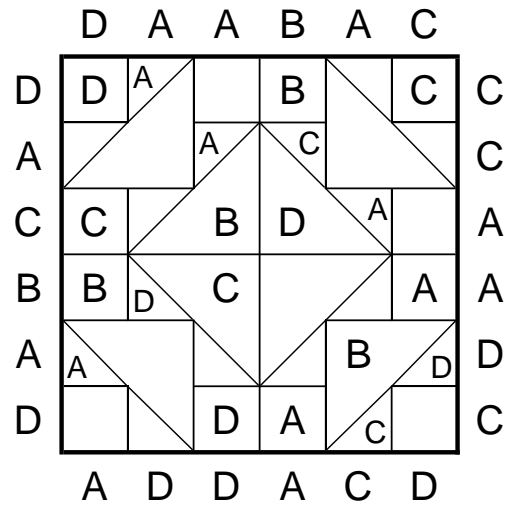
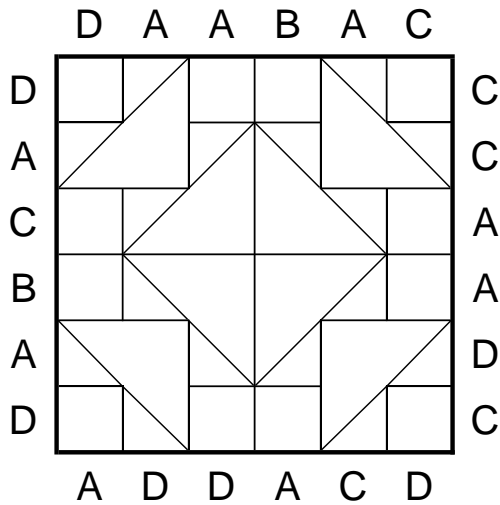
1. – 3. IRREGULAR SKYSCRAPERS (21 + 33 + 45 points)

Place a number from 1 to N into each cell so that each digit appears exactly once within a row or a column. Each number in the grid represents the height of a skyscraper. The clues outside of the grid indicate how many skyscrapers can be seen when looking from the corresponding direction. Higher skyscrapers block the view of smaller ones. N will be given in a circle next to the puzzle.



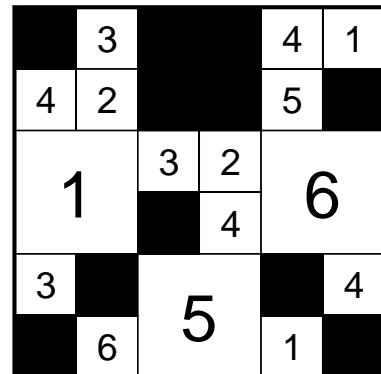
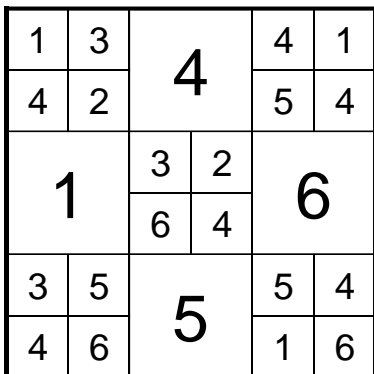
4. – 5. IRREGULAR EASY AS ABCD (49 + 53 points)

Place the letters from given range (A-D in the example) into the grid so that each letter appears exactly once within a row or a column. Some cells will remain empty. The letters outside of the grid indicate the first visible letter in the corresponding row or column.



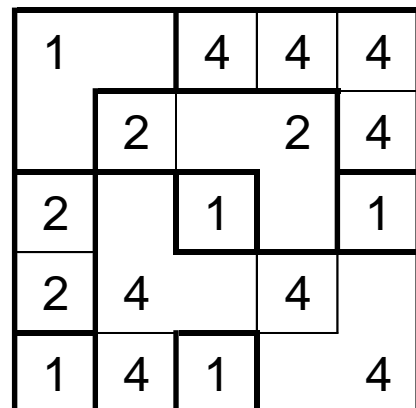
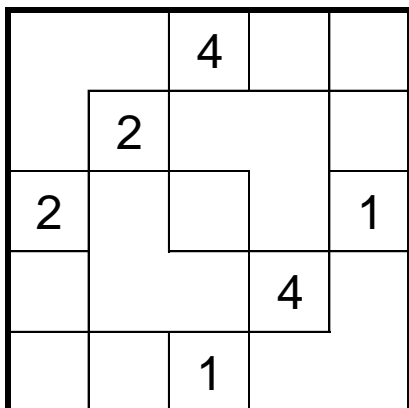
6. – 7. IRREGULAR HITORI (38 + 44 points)

Shade some cells in the grid so that no numbers are repeated in any row or column. Shaded cells cannot touch each other orthogonally (i.e. they must not share edges). Unshaded cells must be orthogonally interconnected.



8. – 9. IRREGULAR FILLOMINO (52 + 45 points)

Divide the grid along the given lines into regions so that no two regions with the same area share an edge. Each given number must represent the area of the region it belongs to – counted in number of cells of that region, regardless of the sizes of those cells. A region may contain none, one, or more of the given numbers. Only the solutions that are consistent within the whole grid will be accepted. If all borders are marked it is enough, as well as if all digits are written.



10. – 11. IRREGULAR KAKURO (38 + 82 points)

Fill all empty squares using numbers 1 to 9 so the sum of each horizontal block of white cells equals the clue on its left, and the sum of each vertical block of white cells equals the clue on its top. In addition, no number may be used more than once in the same block.

	16	7	18	19
15				
4		22		
7		14	10	
30			17	

	16	7	18	19
15	2	3	4	1
4	3	22	5	
7	1	14	9	8
30	4	2	10	2
	6		8	9
				3



Round 14 – PERPLEXITY

Team

Friday 21st October 2016, 17:00 – 17:30

30 minutes – 1 puzzle – 1400 points

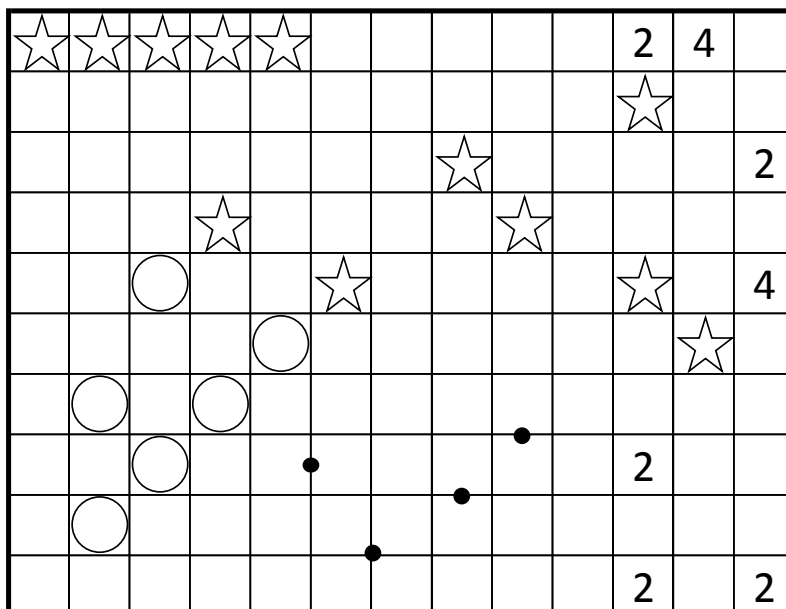
1. PERPLEXITY1400 points

This round contains 13 types of puzzles next to each other forming one big grid. Borders between individual puzzles are not marked. Puzzles may have any shape (not only rectangular) but cells belonging to one type of puzzle must be orthogonally connected.

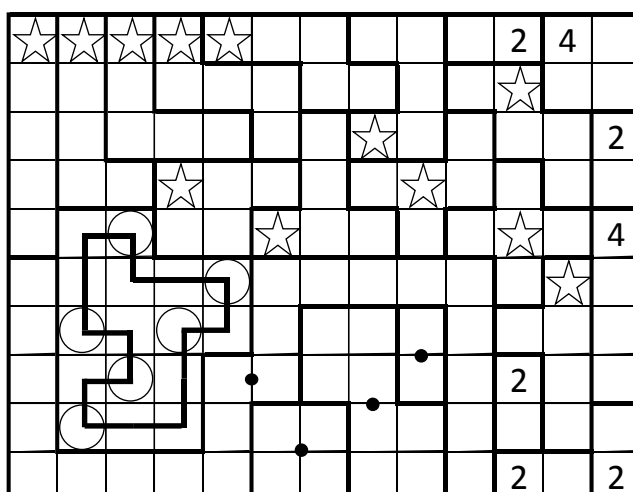
Each puzzle type appears exactly once in the grid. Your task is to find the borders of each of the puzzles and solve them according to the rules afterwards. No empty cells may appear on the grid edge of any puzzle in this round.

Points distribution:

For marking purposes, the grid is divided into sectors consisting of areas of 5x5 cells. 35 points will be awarded for each correctly filled sector. The competition puzzle will contain 40 areas of 5x5 cells. This areas will not be outlined in the competition puzzle, the organizers will outline the borders during the marking process.



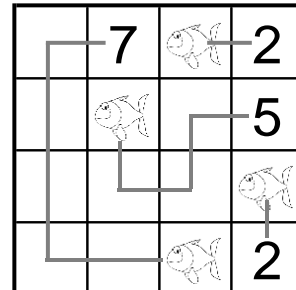
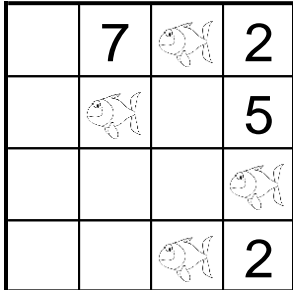
The example contains only 4 types of puzzles: Star Pentomino, Spiral Galaxies, Every Second Turn and Rectangles.



USED PUZZLE TYPES IN RANDOM ORDER

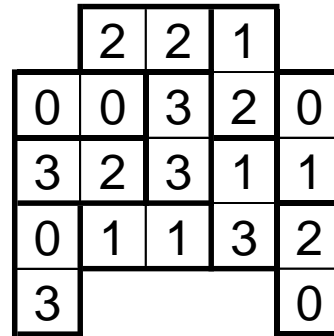
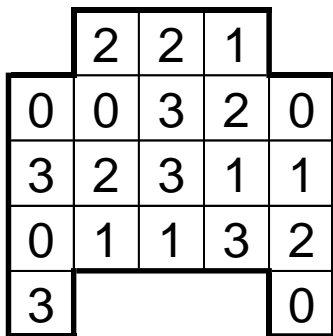
1. ANGLERS (numbers and pictures of fish)

The grid represents a lake and some squares contain a fish. There are a few anglers sitting inside the lake, each of whom have caught a fish. The cords only travel horizontally or vertically and do not cross or overlap themselves or each other. Numbers reveal the lengths of the cords that connect the given anglers with their fish (including the cells with number and fish). Each cell belongs to exactly one cord.



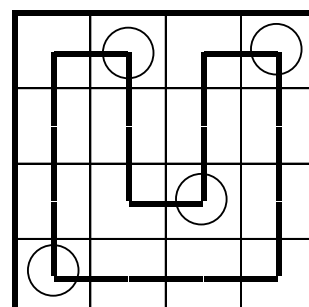
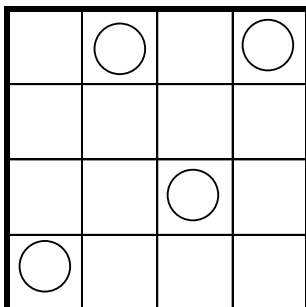
2. DOMINO (42 numbers)

Find the whole set of 21 dominoes from 1-1 to 6-6 (0-0 to 3-3 in the example) by dividing the grid into orthogonally connected areas. Each area contains exactly two cells. The set of dominoes will NOT be given. Used dominoes: 11, 12, 13, 14, 15, 16, 22, 23, 24, 25, 26, 33, 34, 35, 36, 44, 45, 46, 55, 56, 66.



3. EVERY SECOND TURN (white circles)

Draw a single continuous loop in the grid using horizontal and vertical line passing through the centres of all the cells. The loop cannot cross or overlap itself. It makes a 90-degree turn at every square with a circle. There is exactly one turn between every two consecutive circles along the loop. No cells inside the loop may remain empty.



4. FOUR WINDS (numbers)

Draw one or more horizontal or vertical lines from each numbered clue so that each blank cell is a part of exactly one line. Lines cannot intersect each other nor cells with numbers. Numbers indicate sum of the lengths of lines starting in that number. No cells inside the grid may remain empty.

3			
			2
	4		
			3

3	—	—	
		—	2
—	4	—	—
—	—	—	3

5. NURIKABE (numbers)

Shade some empty cells so that the grid is divided into white regions, each containing exactly one given number. The area of each white region must be equal to the number it contains. Two white areas may touch each other only diagonally. All shaded cells must be orthogonally connected with each other, but no 2x2 group of cells can be entirely shaded.

	4			1
				1
			1	
2				

	4			1
				1
			1	
2				

6. RECTANGLES (numbers)

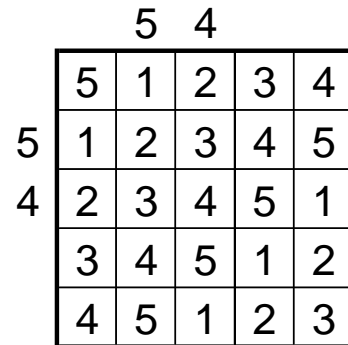
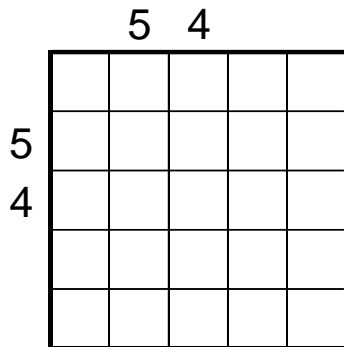
Divide the grid into rectangles and squares so that each of them contains exactly one number. Numbers inside the grid indicate the area of the corresponding region. Regions cannot overlap each other.

				9			
	8						
4		4					5
12					9		3
						3	
			7				

				9			
	8						
4		4					5
12					9		3
						3	
			7				

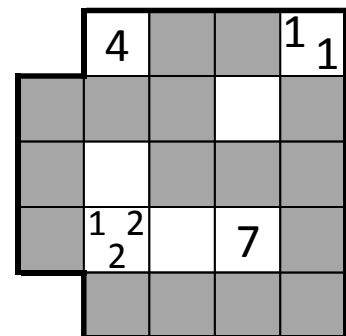
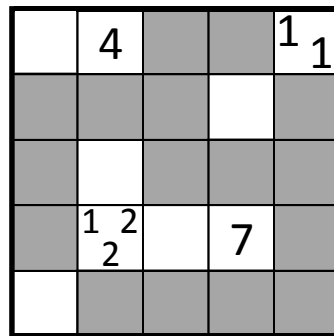
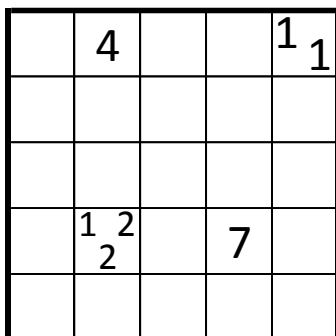
7. SKYSCRAPERS (numbers)

Place a number from 1 to 7 (from 1 to 5 in the example) into each cell so that each digit appears exactly once within a row or a column. Each number in the grid represents the height of a skyscraper. The clues outside of the grid indicate how many skyscrapers can be seen when looking from the corresponding direction. Higher skyscrapers block the view of smaller ones. This puzzle must have a rectangular area of size 7x7 cells (besides that the valid clues outside are also part of the puzzle).



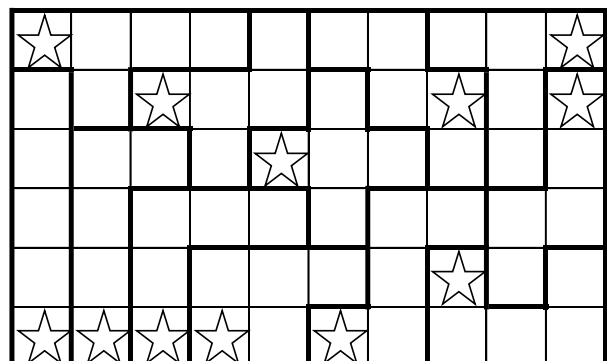
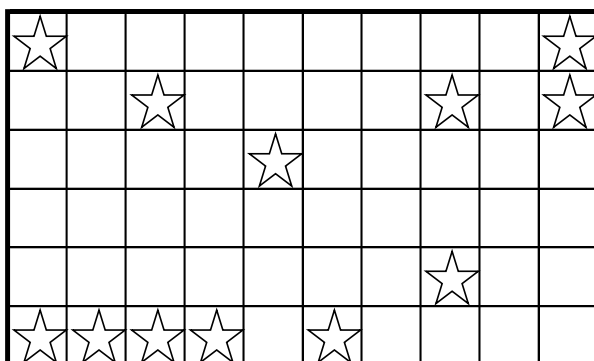
8. TAPA (numbers, multiple clues)

Shade some cells to create an orthogonally interconnected region of shaded cells. Numbers in a cell indicate the lengths of consecutive shaded blocks in the cells neighbouring orthogonally or diagonally. If there is more than one number in a cell, there must be at least one white cell between each two shaded blocks. Shaded cells cannot form a 2x2 square. Cells containing numbers cannot be shaded. No empty cells should appear on the grid edge. Only clues and shaded cells may be there.



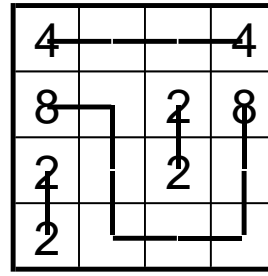
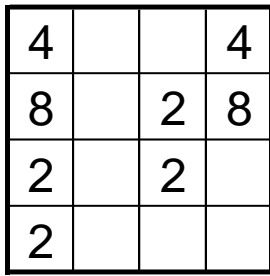
9. STAR PENTOMINO (stars)

Place the complete set of pentominoes into the grid so that the pentominoes do not overlap each other. Each pentomino must contain exactly one star. Pentominoes can be rotated and/or mirrored. The list of all pentominoes will NOT be given. Used pentominoes: F I L N P T U V W X Y Z.



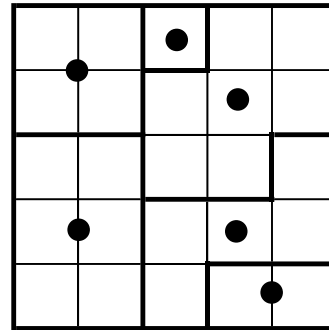
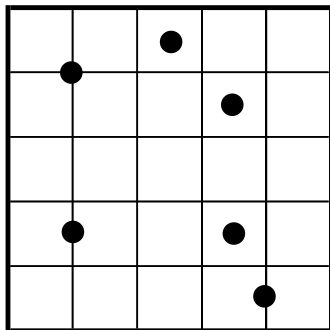
10. SUM NUMBERLINK (numbers)

Connect each pair of the same numbers with a line that is one cell wide and does not form a 2x2 rectangle. The line can only pass vertically and horizontally through the centres of cells. The number of cells the line passes through must be equal to the numbers it connects.



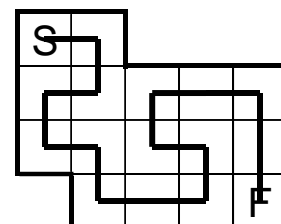
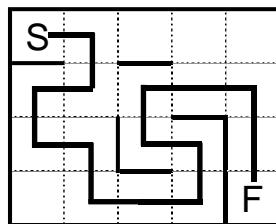
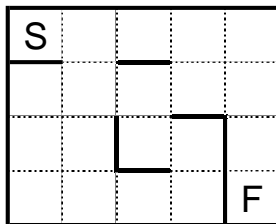
11. SPIRAL GALAXIES (black circles)

Divide the whole grid along the given lines into regions so that every area contains exactly one circle. Each area must be center-symmetrical about the circle it contains. Each cell must belong to exactly one area.



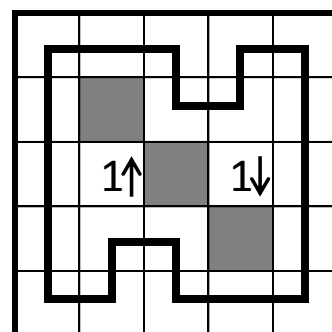
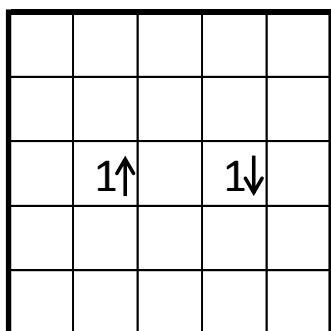
12. TWO STEP MAZE (letters S and F in outlined squares)

Find a way from the cell with S (as Start) to the cell with F (as Finish). The way must only pass horizontally or vertically through the centres of cells. Along your way, you may not enter any cell twice, and you may never make more than two consecutive steps in the same direction (you may pass straight through 3 cells at most). No empty cells should appear in the grid. No bold segments are given in the competition grid.



13. YAJILIN (outlined clues with numbers and arrows)

Shade some cells and draw a loop which passes through all the unshaded cells except those containing clues. Clues indicate the number of shaded cells in the direction given by the arrow. Shaded cells cannot touch each other horizontally nor vertically.





Round 15 – TOROIDAL

Team

Friday 21st October 2016, 17:40 – 18:30

50 minutes – 16 puzzles – 2000 points

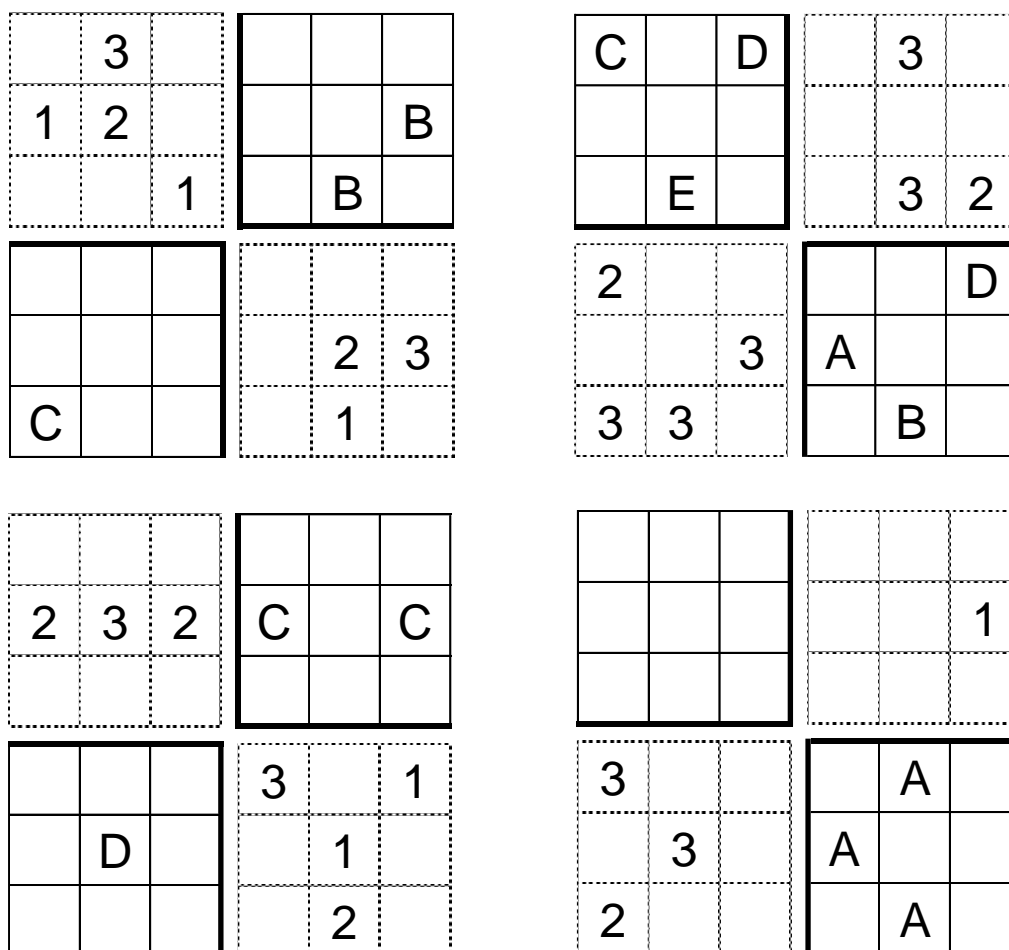
Points distribution: 25 points for each correctly matched puzzle,
100 points for every correctly solved puzzle (125 points in total for each puzzle)

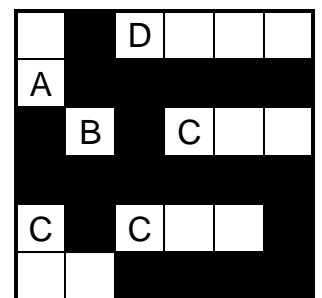
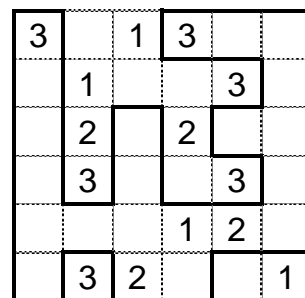
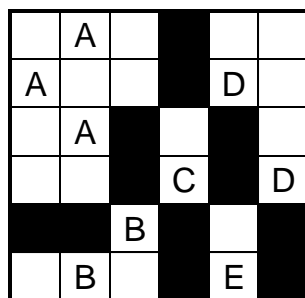
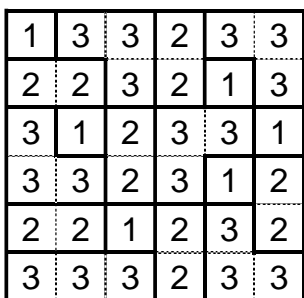
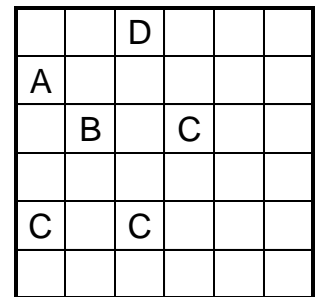
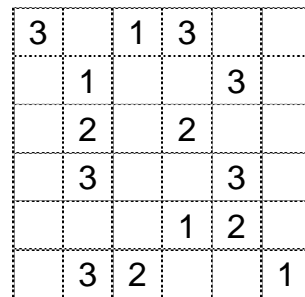
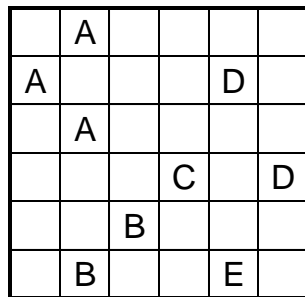
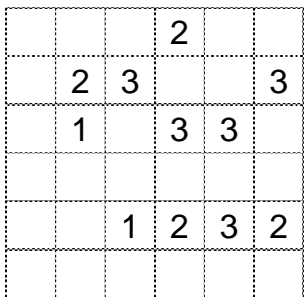
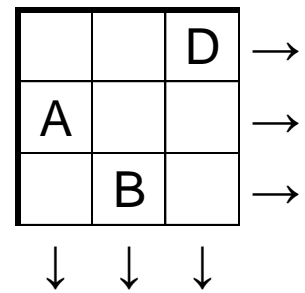
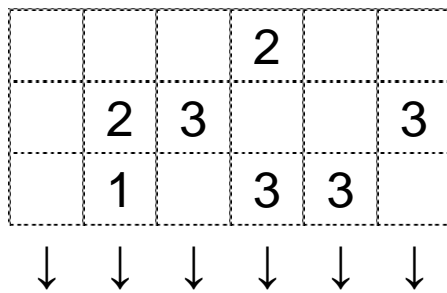
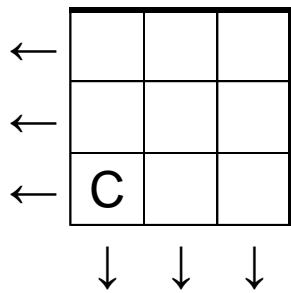
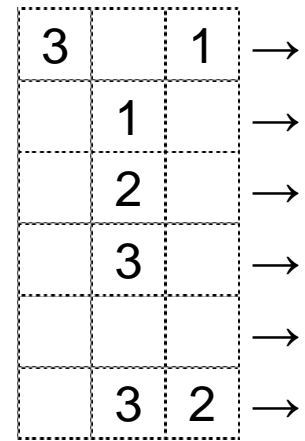
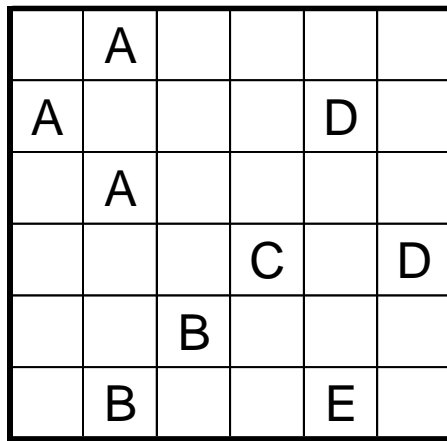
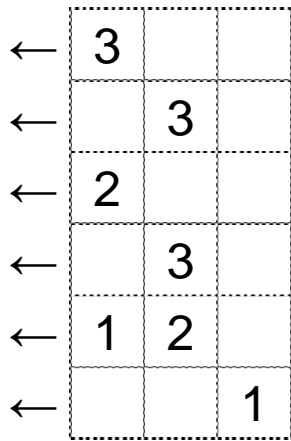
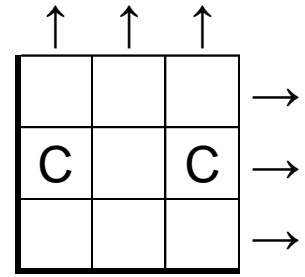
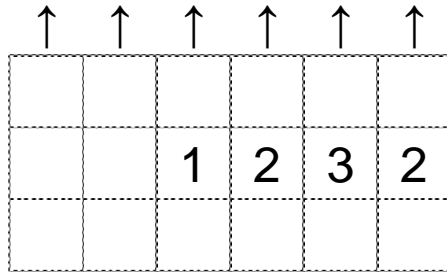
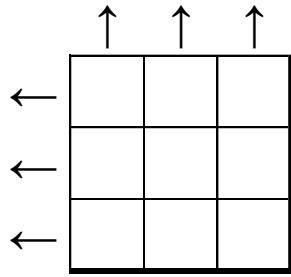
You will receive an envelope with 16 puzzle pieces each of size of 10x10 cells. Each of the pieces will be divided into four quarters (of size of 5x5 cells), which belong to four different puzzles. Your task is to arrange the 16 pieces into a 4x4 grid so that the neighbouring pieces match together and form a puzzle with one unambiguous solution. The grid is toroidal (see the example layout).

This toroidal grid will contain 16 puzzles of 8 different puzzle types. Each puzzle type appears exactly twice. The puzzle types may be divided into four groups depending on their appearance – circles, regions, numbers and letters. However these puzzle types look very similar so you also have to find out which puzzle type each piece belongs to.

Your task in this round is to arrange the pieces into a 4x4 grid, find out which rules belong to which puzzle and finally solve all the puzzles according to the rules.

This example consist of 4 pieces of 4 puzzles (Coded Nurikabe, Dominion, Fences and Fillomino 123), that should be arranged into a 2x2 grid.

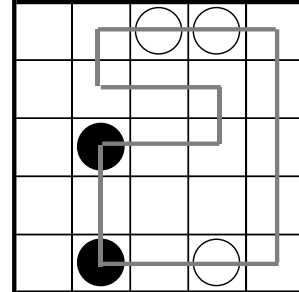
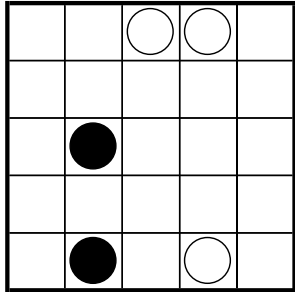




USED PUZZLE TYPES

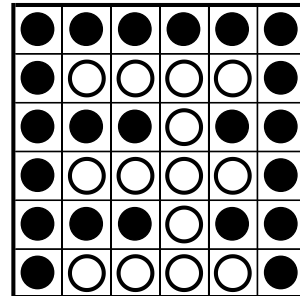
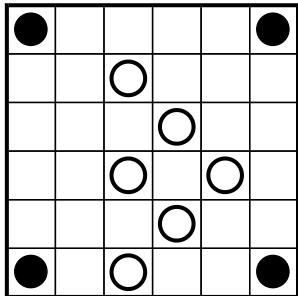
MASYU (circles)

Draw a single loop that travels horizontally and vertically between cell centers and passes through each circle. The loop must go straight through white circles, but must turn in at least one of the adjacent cells. The loop must turn in the black circles and go straight through both following cells.



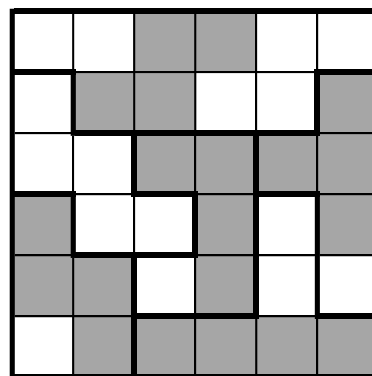
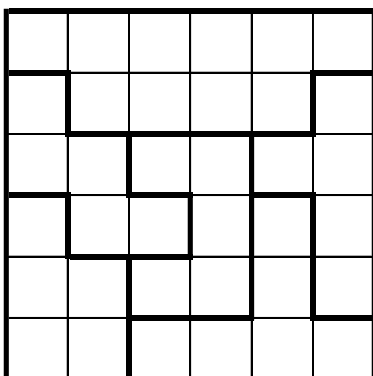
YIN-YANG (circles)

Fill each empty cell with either a black or a white circle. All white circles must form a single orthogonally interconnected area and all black circles must form a single orthogonally interconnected area. There cannot be any 2x2 cell region in the grid consisting of circles of the same color.



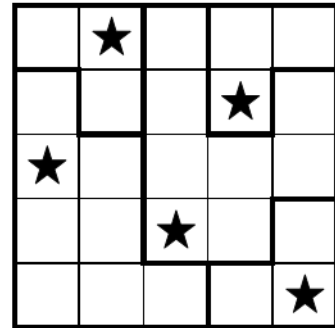
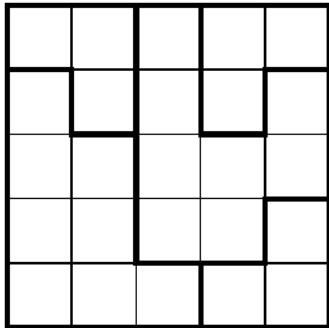
LITS+ (regions)

Shade some cells in the grid so that there are exactly 0 or 4 shaded cells in each outlined region. In each area, the shaded cells must be orthogonally interconnected, forming a tetromino L, I, T or S. The tetrominoes can be rotated and/or reflected. All shaded cells must be connected orthogonally, and there cannot be any 2x2 square consisting entirely of shaded cells or of unshaded cells. No two tetrominos of the same shape (even if reflected or rotated) can share an edge.



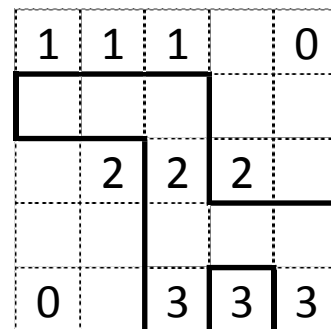
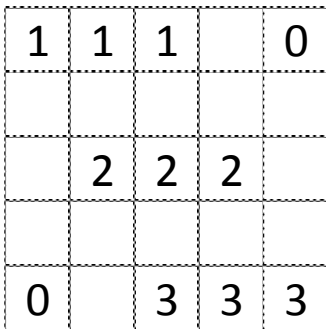
SMALL STARBATTLE (regions)

Place some one-cell size stars into the grid so that each row and column contains exactly 2 stars and each outlined area contains 1 star (in example 1 star in each row, column and outlined area). The cells containing stars cannot touch each other, not even diagonally.



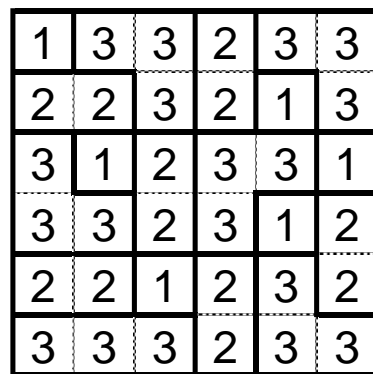
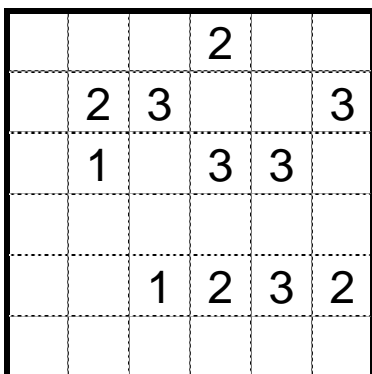
FENCES (numbers)

Draw a single continuous loop along the given lines. A clue in a cell indicates how many edges of that cell are used by the loop. The loop may not touch or cross itself.



FILLOMINO 123 (numbers)

Divide the grid along the given lines into regions consisting of 1, 2 or 3 cells so that no two regions with the same area share an edge. Each given number must represent the area of the region it belongs to. A region may contain none, one, or more of the given numbers. Only the solutions that are consistent within the whole grid will be accepted. If all borders are marked it is enough, as well as if all digits are written.



CODED NURIKABE (letters)

Shade some empty cells in the grid to divide it into white regions (islands), each containing exactly one of the given numbers. The area of each white region must be equal to the number it contains. No two cells belonging to distinct white areas can touch each other orthogonally. All shaded cells must be orthogonally connected with each other, but no 2x2 group of cells can be entirely shaded. In this puzzle, the numbers have been replaced with letters. The same numbers have been replaced with the same letters. Different numbers have been replaced with different letters.

		D			
A					
	B		C		
C		C			

		4			
2					
	1		3		
3		3			

DOMINION (letters)

Divide the grid into some regions formed of adjacent squares, with using dominoes (1x2 black cells). Dominoes cannot overlap or touch each other orthogonally. Each region must contain only the same letters and at least one letter.

W				C
			C	
P				
			W	

W				C
			C	
P				
			W	



Round 16 – STICKERS

Team

Saturday 22nd October 2016, 09:00 – 09:30

30 minutes – 8 puzzles – 1200 points

1. STARBATTLE	110 points
2. TENTS.....	55 points
3. DOUBLE BLOCK.....	195 points
4. GAPS.....	165 points
5. PRODUCTS	275 points
6. AKARI.....	80 points
7. HALFDOMINO.....	235 points
8. DARTS	85 points

Please note that the order of the puzzles in this round has been changed

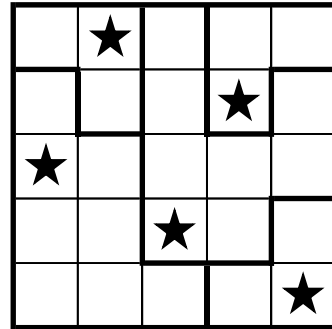
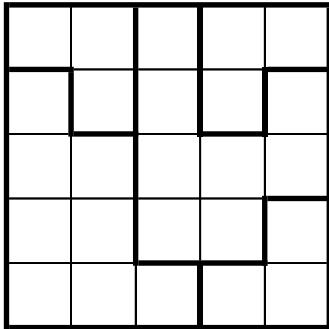
Each of the eight puzzles in this round will be printed on sleek paper. No writing tools will be allowed and you will be not allowed to write on these papers. The only permitted item will be a number of circular stickers which will be provided to each team. Set of stickers with the team name will be provided as well.

Any kind of marks apart from the stickers are forbidden. For example scratching the paper with your fingernails or tearing up the sticker background are also not allowed.

The puzzles in this round will be solved in the given order. After a team submits a puzzle, they will be given the next one and will not be allowed to come back to the submitted puzzles. The puzzles will not be checked during the round so they can be submitted whether they are solved correctly or not.

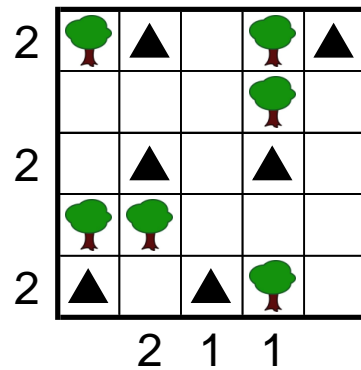
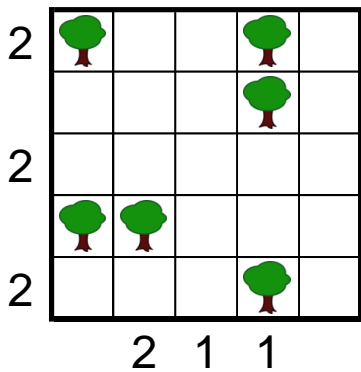
1. STARBATTLE (110 points) – mark the positions of the stars

Place two one-cell size stars into the grid so that each row, column and outlined area contains exactly two stars. No two cells containing stars can touch each other, not even diagonally.



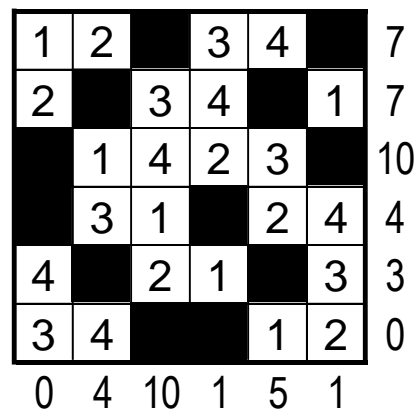
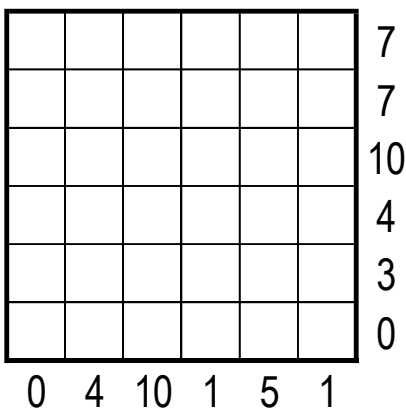
2. TENTS (55 points) – mark the positions of the tents

Attach a one-cell sized tent to each tree, in a horizontally or vertically adjacent cell. Cells with tents cannot touch each other, not even diagonally. Each tree has to be paired with exactly one tent but can touch other tents. Numbers outside the grid indicate the number of tents in the corresponding row or column.



3. DOUBLE BLOCK (195 points) – mark the positions of the shaded cells and all numbers 3

Shade exactly two cells in each row and column and fill the remaining cells with numbers from 1 to N (where N is the grid size – 2). The numbers outside the grid indicate the sum of the numbers between the shaded cells in corresponding row or column.



4. GAPS (165 points) – mark the positions of the circles

Place exactly two circles into each row and column. The circles should not touch each other, not even diagonally. The numbers outside the grid indicate the number of empty cells between two cells with circles in the corresponding row or column.

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

				○					○	3
○		○								1
						○			○	2
		○		○						1
						○		○		1
○			○							2
						○		○		1
	○		○							1
						○			○	3
	○							○		5
3	1	1	1	2	1	1	2	3	5	

5. PRODUCTS (275 points) – mark the positions of the numbers

Mark the positions of numbers from 1 to 20 (1 to 10 in the example) in the grid so that each number appears exactly once. Every row, column and main diagonal must contain exactly two numbers. Each cell must contain at most one number. The numbers outside the grid indicate the product of the two numbers in the corresponding row, column or diagonal. Numbers can touch each other.

					40
					10
					27
					28
					16
					30
5	32	54	20	21	2

					40
1			10		10
		9		3	27
	4			7	28
	8		2		16
5		6			30
5	32	54	20	21	2

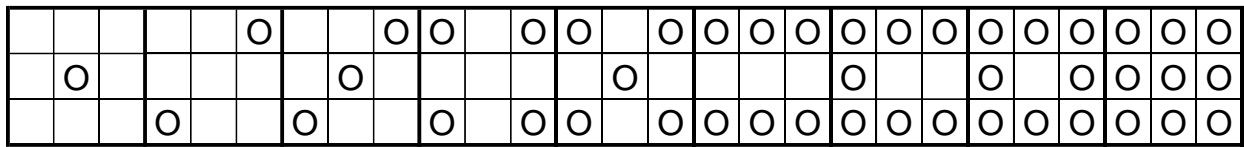
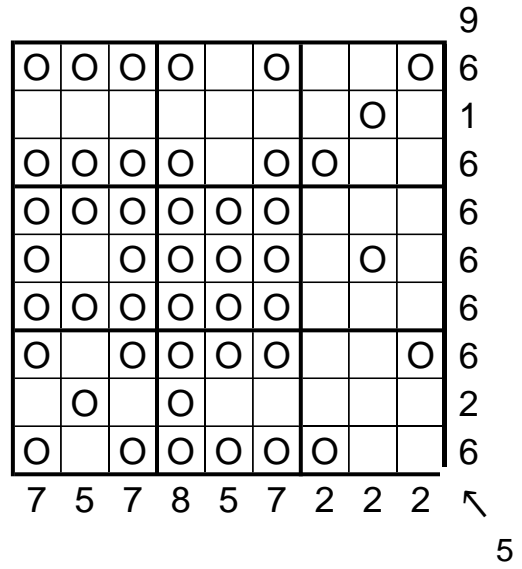
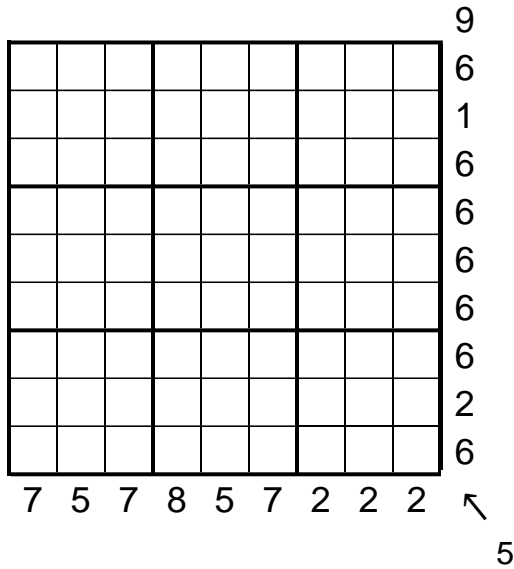
6. AKARI (80 points) – mark the positions of the light bulbs

Place one-cell sized light bulbs into some white cells so that each white cell is illuminated. A light bulb illuminates every white cell in all four orthogonal directions until blocked by a black cell or a grid line. No light bulb can be illuminated by another light bulb. Clue numbers correspond to the number of light bulbs placed in four orthogonally adjacent cells.

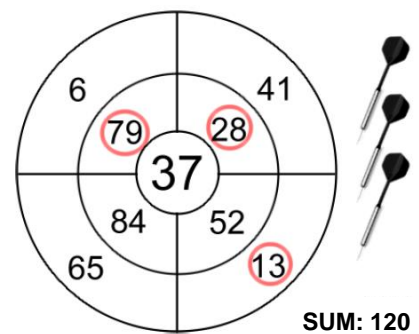
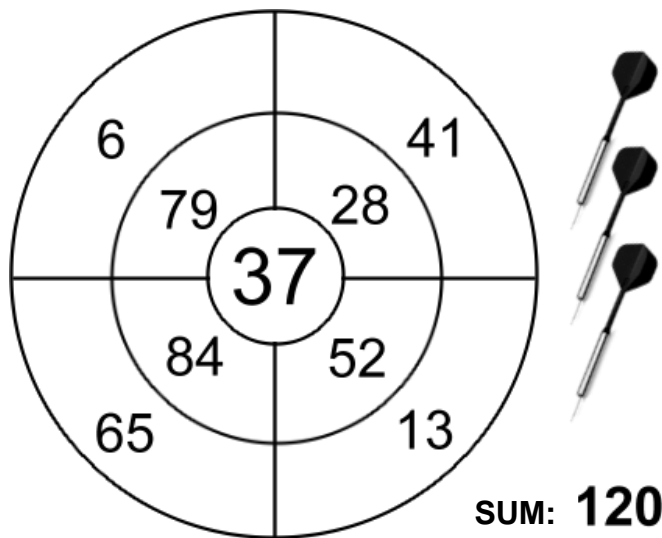
	2			
		1		
			4	
				2

○	2			○
	○	1		
			○	
		○	4	○
			○	2

7. HALFDOMINO (235 points) – mark the positions of the circles that form the half domino tiles
 Put all the nine half domino tiles into the puzzle grid so that the sum of the dots in certain rows, columns or diagonals equals the given numbers assigned to that direction (given outside the grid). The pieces cannot be rotated or mirrored. The domino tiles will be given next to the grid.



8. DARTS (85 points) – mark the sectors of the target hit by the darts
 Hit the target with the given number of darts. Each dart must hit a different sector of the target. The number provided next to the target indicates the sum of the numbers hit by the darts.





Round 17 – PENTOMINOES

Team

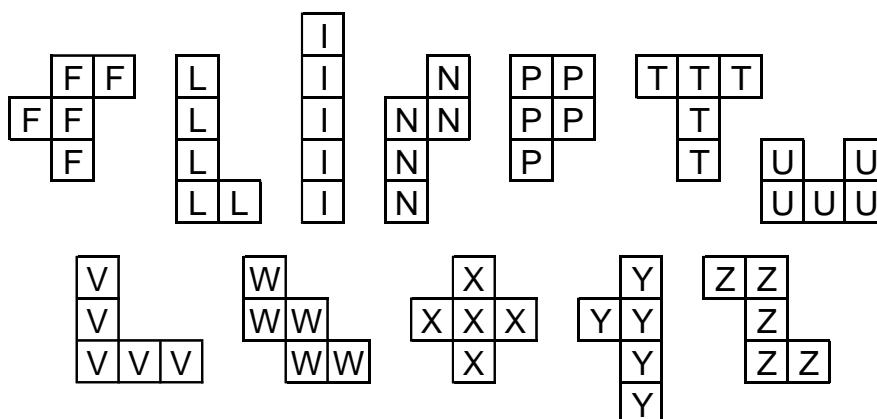
Saturday 22nd October 2016, 09:45 – 10:15

30 minutes – 12 puzzles – 1500 points

You will receive 12 pentomino puzzles in this round. Unlike usual pentomino puzzles, in this dozen, each puzzle will contain exactly one of the pentomino shapes. Besides that, each pentomino shape (including its rotations and reflections) should appear in exactly one of the puzzles.

Your task is to find out which pentomino shape appears in which puzzle and then solve the puzzles correctly according to the instructions. Some of the puzzles can be solvable with more than one pentomino shape, there is only one way how the whole round can be solved correctly. Therefore, partial points will only be awarded for solutions corresponding to this unique solution. Each correctly solved puzzle is worth 125 points.

The puzzle set in this Instruction Booklet is also solvable with the rules above. However, please beware the puzzles are much smaller and easier than those used in the competition.

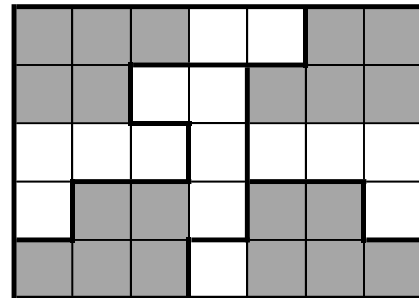
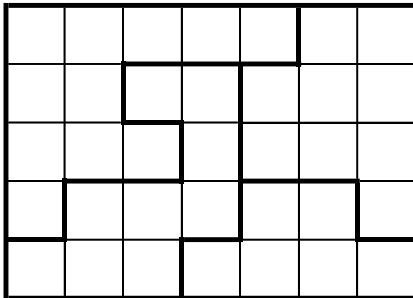


	F	I	L	N	P	T	U	V	W	X	Y	Z
Areas												
Classic												
Consecutive												
Fences												
White												
Japanese Sums												
Minesweeper												
Rooms												
Scrabble												
Snakes												
Tapa												
Touch												

USED PUZZLE TYPES

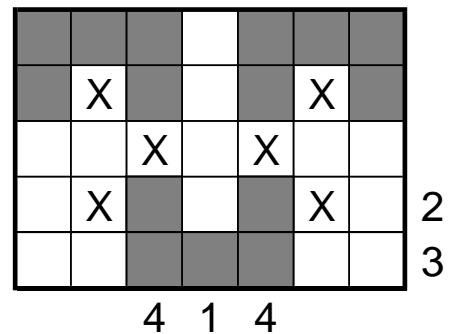
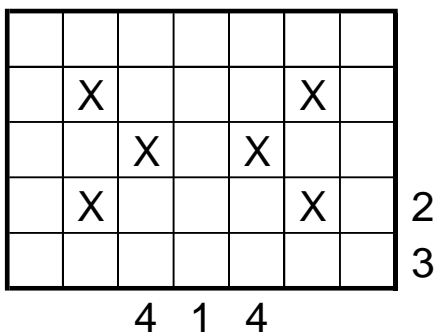
PENTOMINO AREAS

Place identical pentominoes into the grid so that each outlined region contains exactly one pentomino. The pentominoes may be rotated and reflected, but they cannot touch each other, not even diagonally. The pentominoes cannot pass through the outlined borders.



PENTOMINO CLASSIC

Place identical pentominoes into the grid. The pentominoes may be rotated and reflected, but they cannot touch each other, not even diagonally. No part of a pentomino can be placed in a cell marked with 'X'. The numbers outside the grid indicate the number of cells occupied by pentominoes in the corresponding row or column.



PENTOMINO CONSECUTIVE

Place 5 identical pentominoes into the grid (3 in the example). The pentominoes may be rotated and reflected, but they cannot touch each other, not even diagonally. The pentominoes must contain five different consecutive sets of numbers (in any order).

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

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

PENTOMINO MINESWEEPER

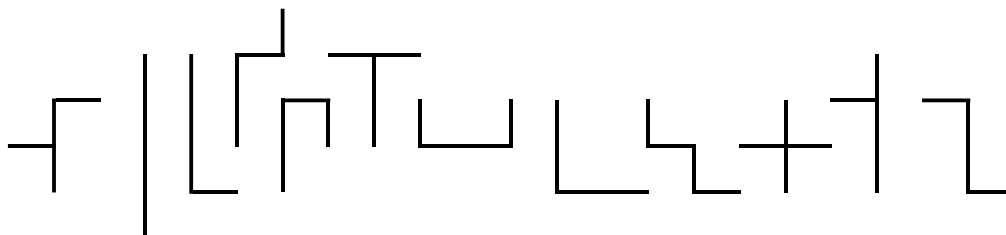
Place identical pentominoes into the grid. The pentominoes may be rotated and reflected, but they cannot touch each other, not even diagonally. The numbers indicate how many of the eight cells neighbouring diagonally or orthogonally are occupied by a pentomino.

3			1			
				1		
			4			
		2				
			3			1

3			1			
				1		
			4			
		2				
			3			1

PENTOMINO ROOMS

Place identical pentominoes (consisting of 4 line segments) into the gridlines. The pentominoes may be rotated and reflected, but they cannot touch each other, not even at point. Each grid cell represents a room. Dividing walls are to be placed in the grid such that all clue numbers represent the number of rooms which can be seen in any of the four directions from that location, counting the room the clue number is in. Dividing walls must be formed exclusively of identical pentomino shapes which must lie along the grid lines and must not touch each other even at a corner. No part of a pentomino may lie along the outer perimeter of the grid: nor may a pentomino touch the perimeter at more than one point.



7			7			8
	7		8		6	
		4	5	4		
	4		6		4	
7			4			8

7			7			8
	7		8		6	
		4	5	4		
	4		6		4	
7			4			8

PENTOMINO SCRABBLE

Place identical pentominoes into the grid. The pentominoes may be rotated and reflected, but they cannot touch each other, not even diagonally. Afterwards, place all the words from the given list into all the remaining (white) cells of the grid so that each word can be read from left to right or from top to bottom in the grid exactly once. All words must be orthogonally connected. No words except the ones listed can appear anywhere in the grid (not even a two-letter word). Some letters are already given.

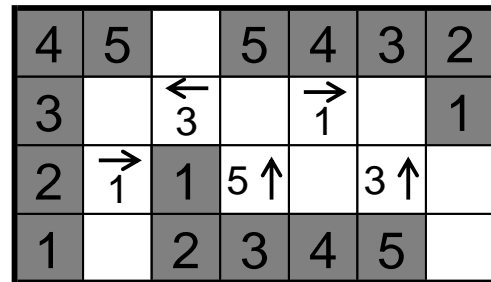
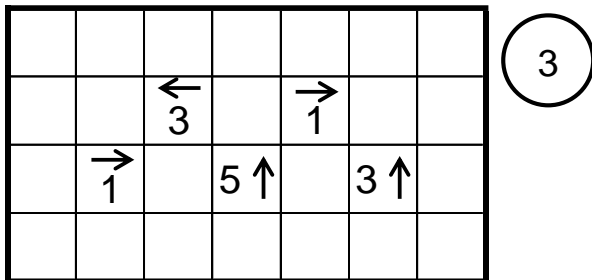
			E			
	S				A	
			N			

- AN
- BE
- BIKE
- CLAP
- EON
- HIS
- ICE
- LAB
- LI
- OH
- SLOVAK
- UP

O	H					B
	I	C	E		L	I
	S	L	O	V	A	K
		A	N		B	E
	U	P				

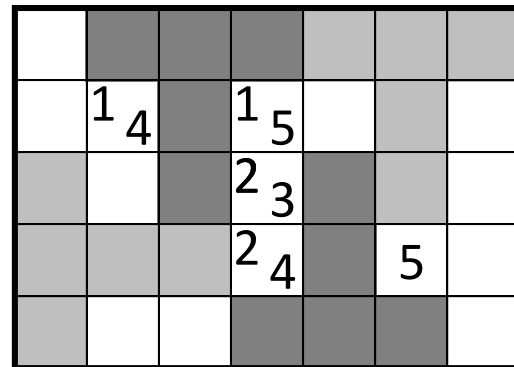
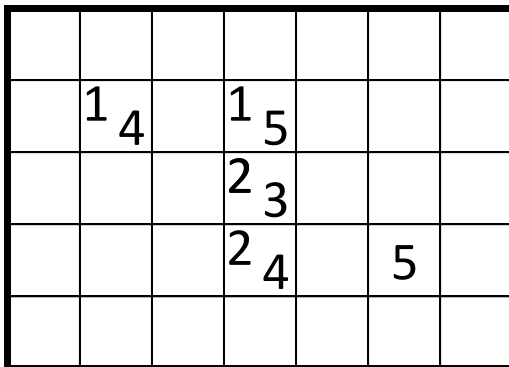
PENTOMINO SNAKES

Write numbers from 1 and 5 into some white cells to build sequences of orthogonally adjacent cells, containing all numbers in strictly increasing or decreasing order (number snakes). The number of the snakes will be given in a circle next to the puzzle. These number snakes must all be of identical shape, which can be rotated or reflected. No two number snakes can touch each other orthogonally, diagonal touch is allowed. Numbers in clue cells denote which number in a black cell (number cell) is the first number in the direction the arrow points to. A zero denotes that there is no number cell in the direction the arrow points to. No snake may see another snake. A snake's eyes are on the side of its head (the 1-cell) opposite the 2-cell. It can only see in that direction, in a straight line, up to the edge of the grid or the nearest black cell (whichever is closer).



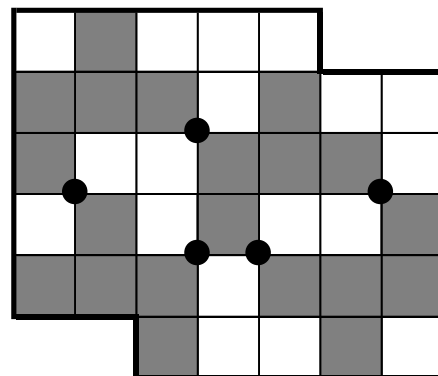
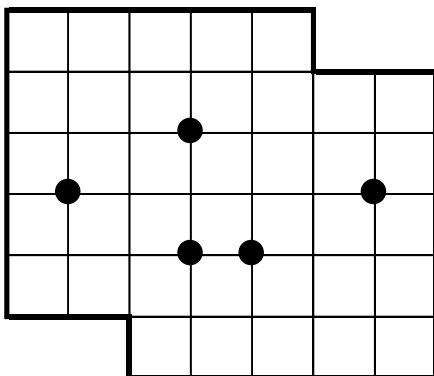
PENTOMINO TAPA

Shade some cells to create an orthogonally interconnected wall of shaded numbers, so that the wall is made up exclusively of non-overlapping identical pentominoes. Numbers in a cell indicate the lengths of shaded cell blocks in its neighbouring cells. If there is more than one number in a cell there must be at least one unshaded cell between each two shaded blocks. Shaded cells cannot form a 2×2 square or larger. There are no wall segments in the cells containing numbers.



PENTOMINO TOUCH

Place identical pentominoes into the grid so that they do not touch each other horizontally nor vertically. Every point where two pentominos touch diagonally is marked with a black dot. Pentominos may be reflected and rotated.





Play-offs

Under 18

1. SLOVAK SUMS

Place digits from the given range in some empty cells, so that each row and column contains each digit exactly once. Clue numbers indicate the sum of orthogonally adjacent digits. The number of circles under a clue number indicates the number of digits involved in this sum. Some numbers or circles may have been replaced with a question mark. Question mark may represent any number, including 0.

2. CLIMBERS

Mark the paths of all climbers through the hill. Each climber starts his climb from the bottom of the hill, so the number of climbers equals to the number of cells in the bottom row. Each climber ends his climb in different height. The path of each climber must lead only through neighboring cells. A climber can never visit two cells containing the same letters. Every cell of the hill must be visited exactly once.

3. SPIRAL GALAXIES

Divide the whole grid along the given lines into regions so that every area contains exactly one circle. Each area must be center-symmetrical about the circle it contains. Each cell must belong to exactly one area.

Over 50

1. WALLS

Draw a single horizontal or vertical line across the full width or height of the centre of every white cell, so that the total length of all lines touching each black cell is equal to the number given in the corresponding clue.

2. BATTLESHIPS

Place the given fleet into the grid. The ships cannot touch each other, not even diagonally. The ships may be rotated. The clues outside the grid indicate the number of ship segments in the corresponding direction. If a cell is marked with X, then no segment of any ship can be placed in this cell.

3. MAGNETS

Place some magnets into the given grid so that the number of positive and negative poles in each row or column is equal to the number given outside the corresponding row or column. Each magnet consists of one positive and one negative pole. The poles with the same charge cannot touch each other orthogonally.

Finals – Round 1

ARROWS

Place exactly one arrow into each of the cells outside the grid. Numbers inside the grid indicate how many arrows point to the cell in the grid. An empty cell inside the grid means that the number of arrows pointing at it is unknown. Each arrow has to point at at least one gridcell in one of the given eight directions.

CODED SKYSCRAPERS

Place a number from 1 to 6 into each cell so that each digit appears exactly once in a row or a column. Each number in the grid represents the height of a skyscraper. The clues outside of the grid indicate how many skyscrapers can be seen when looking from the corresponding direction. Higher skyscrapers block the view of smaller ones. In this puzzle, the numbers have been replaced with letters. The same numbers have been replaced with the same letters. Different numbers have been replaced with different letters.

DOMINO

Find the whole set of dominoes by dividing the grid into orthogonally connected areas. Each area contains exactly two cells. Black cells are not a part of any domino. The domino set will be given next to the puzzle.

FILLOMINO 123

Divide the grid along the given lines into regions consisting of 1, 2 or 3 cells so that no two regions with the same area share an edge. Each given number must represent the area of the region it belongs to. A region may contain none, one, or more of the given numbers. Only the solutions that are consistent within the whole grid will be accepted. If all borders are marked it is enough, as well as if all digits are written.

FULL TAPA

Shade some cells to get a valid Tapa solution: Shade some cells to create a continuous region of shaded cells. Numbers in the remaining (unshaded) cells indicate the lengths of consecutive shaded blocks in the cells neighboring orthogonally and diagonally. If there is more than one number in a cell, there must be at least one white cell between the shaded blocks. Shaded cells cannot form a 2x2 square.

HEYAWACKY

Shade some empty cells in the grid. No two shaded cells can be orthogonally adjacent. All of the unshaded cells should form one continuous region. A number given in a region indicates the number of shaded cells in that region. There can never be a horizontal or vertical line of unshaded cells that crosses two region boundaries.

PRODUCTS

Mark the positions of numbers from the given range in the grid so that each number appears exactly once. Every row, column and main diagonal must contain exactly two numbers. Each cell must contain at most one number. The numbers outside the grid indicate the product of the two numbers in the corresponding row, column or diagonal. Numbers can touch each other.

YAJILIN

Shade some cells and draw a loop which passes through all the unshaded cells except those containing clues. Clues indicate the number of shaded cells in the direction given by the arrow. Shaded cells cannot touch each other horizontally nor vertically.

Finals – Round 2

ABC DIVISION

Divide the grid along the given lines into regions so that each region contains each letter from the given word as many times as it is stated. Each cell of the grid must belong to exactly one region.

AREA NUMBERS

Place one number into every outlined region so that the number is equal to the area of the corresponding region. Numbers outside the grid indicate the sum of the numbers in the corresponding row or column.

BACA

Place the given letters into the grid so that every row and column contains each letter exactly once. Shade all the remaining cells. The numbers outside of the grid indicate the lengths of the shaded blocks in the corresponding row or column in the correct order. The given letters may be shaded. The letters outside of the grid indicate the first visible letter in the corresponding row or column.

COUNTRIES

Divide the grid into few connected areas so that each area contains at least one of the given letters. Each area contains all occurrences of the same letter in the grid. Numbers outside the grid indicate the number of cells in the corresponding row or column which belong to the area touching to the grid edge at this point. Each area must touch the edge of the grid.

LOOP KROPKI

Draw a single closed loop that travels horizontally and vertically through all white cells. The loop cannot touch or cross itself. The dots in the grid provide information about the lengths of loop segments (in number of cells). If there is a white dot between a pair of loop segments, then the difference of the lengths of these segments is exactly one. If there is a black dot between a pair of loop segments, then the quotient of the lengths of these segments is exactly two. There can be either black or white dot between loop segments of lengths 1 and 2. Not all possible dots have been given, but all the given dots must be part of the loop.

PENTOPIA

Place some of the given pentominoes in the grid so that they do not touch each other, not even diagonally. The arrows point at the closest cell occupied by a pentomino in the corresponding direction. The pentomino set will be given next to the puzzle. The shapes can be rotated and/or mirrored. Each pentomino can be placed into the grid at most once. No cell containing an arrow can be a part of a pentomino.

SMALL STARBATTLE

Place some one-cell size stars into the grid so that each row and column contains exactly 2 stars and each outlined area contains 1 star. The cells containing stars cannot touch each other, not even diagonally.

SNAKE

Place a 1-cell wide and 44-cells long snake into the grid so it does not touch itself, not even diagonally. The head and tail of the snake are marked with circles. Numbers outside the grid indicate how many cells in that row or column are occupied by the snake.

Finals – Round 3

ANGLERS

The grid represents a lake and some squares contain a fish. There are a few anglers sitting around the lake, each of whom have caught a fish. The cords only travel horizontally or vertically and do not cross or overlap themselves or each other. Numbers outside the grid indicate the lengths of the cords that connect the given anglers with their fish, including the cell with the fish. Each cell belongs to exactly one cord. Each fish have been caught by exactly one angler.

CODED NURIKABE

Shade some empty cells in the grid to divide it into white regions (islands), each containing exactly one of the given numbers. The area of each white region must be equal to the number it contains. No two cells belonging to distinct white areas can touch each other orthogonally. All shaded cells must be orthogonally connected with each other, but no 2×2 group of cells can be entirely shaded. In this puzzle, the numbers have been replaced with letters. The same numbers have been replaced with the same letters. Different numbers have been replaced with different letters.

COMPASS

Split the grid along the given lines into orthogonally connected regions, exactly one for each clue. Each clue consists of four parts. The number at the top of a clue must be equal to the number of cells within the region lying above the clue, regardless of their horizontal position. Clues on other positions work correspondingly for cells to the right, below and to the left of the clue.

HEXA HIDATO

Fill in the whole grid with numbers so that each number from 1 to N (N will be given in a circle next to the grid) appears exactly once in the grid. Each pair of consecutive numbers (i.e. the numbers whose difference is exactly one) must be placed in a pair of cells sharing an edge.

IRREGULAR KAKURO

Fill all empty squares using numbers 1 to 9 so the sum of each horizontal block of white cells equals the clue on its left, and the sum of each vertical block of white cells equals the clue on its top. In addition, no number may be used more than once in the same block.

LOOP 2 IN 1

Draw a single closed loop into each of the grids that travels horizontally and vertically through all the white cells. Some cells can remain empty. The loop cannot touch or cross itself. The loop must take a turn in each black circle and must pass straight through each white circle. The grid with clues shows the solution from the first grid drawn over the solution of the second grid. Each loop segment in the top grid must be drawn in at least one of the grids. There cannot be a loop segment in any of the bottom grids that is not present in the grid with clues. The empty cells are fully blackened in the grid with clues.

RAILROADS

Place the given pieces into each cell of the grid, so that each piece appears exactly once in each row and column. Every “blind end” of a line (an edge which is not connected to another line) is marked with a circle.

SCRABBLE

Place all words from the given list into the grid so that each word can be read from left to right or from top to bottom in the grid exactly once. All words must be orthogonally connected. No words except the ones listed can appear anywhere in the grid (not even a two-letter word). For this grid, there will be two significant letters given in a circle next to the grid. Each occurrence of these significant letters in the grid has been given.

Team play-off

Individual puzzles:

Team Member A

Domino Divide
Trimino Divide

Team Member B

Full Nurikabe
Full Bosnian Snake

Team Member C

Outside Kropki
Fillomino Kropki

Team Member D

Irregular Hitori
Irregular Skyscrapers

Team puzzle – Samurai:

The other puzzles should be linked to the middle puzzle in the following way: When the puzzles have been arranged correctly, they should be in a shape of a cross. Additionally, every two grids which share a row or a column must have this row or column filled accordingly. It is a part of the solution to discover the correct layout of the puzzles.

In the actual competition puzzle, the first row/column from the edge will be shared.

Middle puzzle

Hitori

Other puzzles

Double Block
Domino
Fillomino
Classic Sudoku