

INSTRUCTION BOOKLET

Dear friends,

This is an initial draft of the Instruction Booklet. The timings and scorings can be slightly changed. You will get the final version of this booklet on your arrival.

All the wordings are related to the actual puzzles, they may not be correct for the given examples,

i.e. there may be said "Place in the grid the digits 1 through 9..." and the example contains only the digits 1 through 6. This means that the actual puzzle uses digits from 1 to 9. Example only shows how the other rules apply.

If you have any questions about the descriptions of the puzzles you may ask them on forum:

<http://forsmarts.com/forum/viewtopic.php?id=170>

Preliminary schedule of the event:

Day 1 (27/10/2008, Monday)

All day - Arrivals

19:00 - 21.00 Welcome Party

Day 2 (28/10/2008, Tuesday)

07:30 - 09:30 Breakfast

10:00 - 11:00 Team photo session

12:00 - 19:00 Half-day trip to "Dudutki".

Lunch in folk style

19:00 - 20:30 Dinner

20:30 - 22:00 Q&A (about the puzzles)

Day 3 (29/10/2008, Wednesday)

07:30 - 09:30 Breakfast

*09:30 - 13:30 Championship official opening
and competition*

13:30 - 15:00 Lunch

15:00 - 18:00 Competition and WPF meeting

19:00 - 20:30 Dinner

Day 4 (30/10/2008, Thursday)

07:30 - 09:30 Breakfast

10:00 - 13:30 Competition and WPF meeting

13:30 - 15:00 Lunch

15:00 - 18:00 Competition and WPF meeting

19:00 - 20:30 Dinner

Day 5 (31/10/2008, Friday)

07:30 - 09:30 Breakfast

10:00 - 13:00 Finals

13:30 - 15:00 Lunch

15:00 - 19:00 Free time

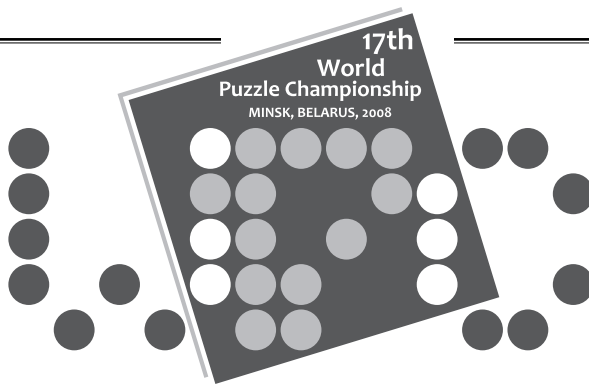
19:00 - ??? Awarding Ceremony.

Farewell Party

Day 6 (01/11/2008, Saturday)

07:30 - 09:30 Breakfast

All day - Departure



Part I - individual

WELCOME

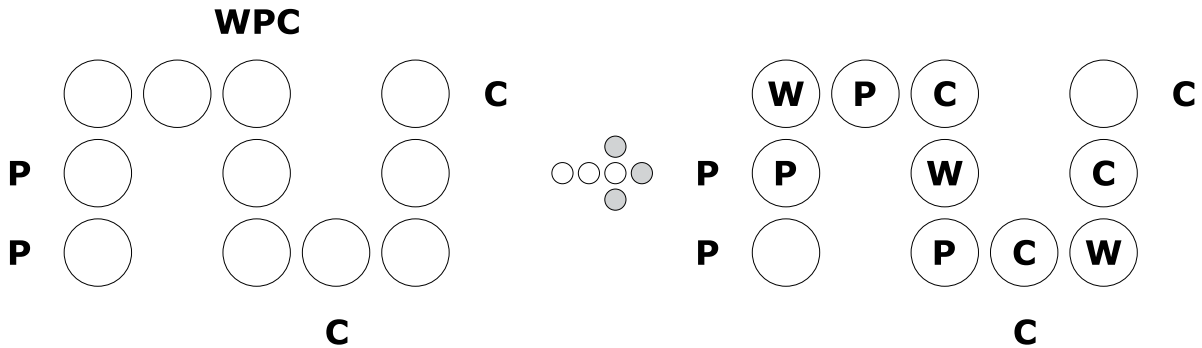
October, 29TH

10:00 - 10:35

1	Easy as MINSK	11
2	Circle sums	14
3	Neighbourhood counting	4+7+4
4	Beads	12
5	Battleships pool	4
6	Distances	16+16
7	Bridges	6
8	Topology	18
9	Navigrids	7+12+9
	TOTAL	140

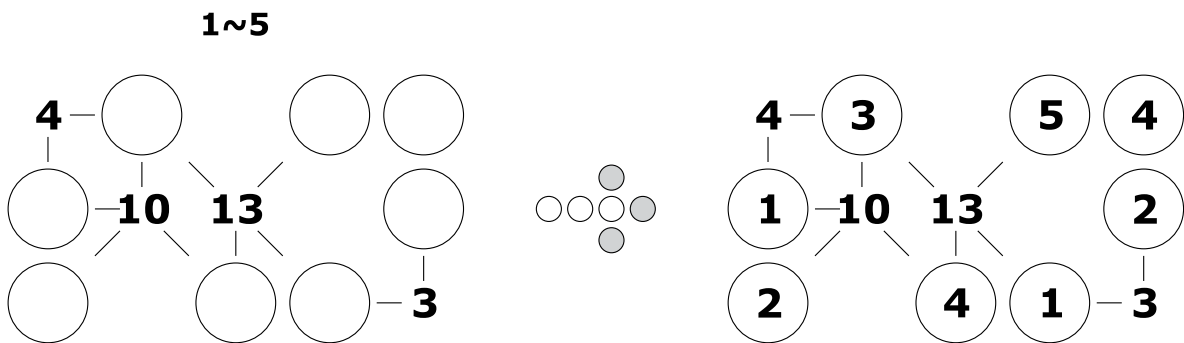
1. Easy as MINSK

Fill in the grid with the letters M,I,N,S,K so that each row contains each letter exactly once. Letters cannot repeat in columns. Diagonally neighbouring circles cannot contain the same letter. Letters given outside the grid must appear first in corresponding directions.



2. Circle sums

Fill the circles with the digits 1 through 9 so that the numbers given in the grid indicate the sum of all adjacent (horizontally, vertically and diagonally) digits inside the circles. Digits cannot be repeated within any single row, column and sum.

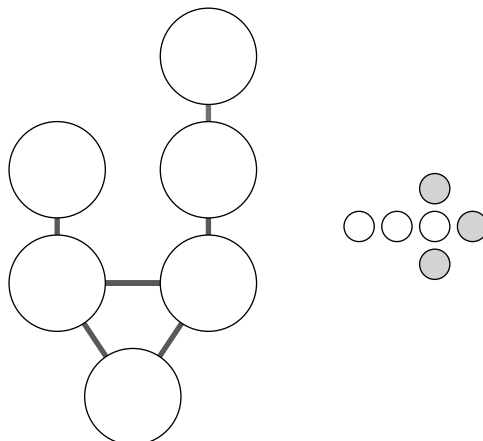


3. Neighbourhood counting

Place the numbers 1 through 11/12/9 in the grid. Below each puzzle, you can see the sums of all connected neighbours for each number.

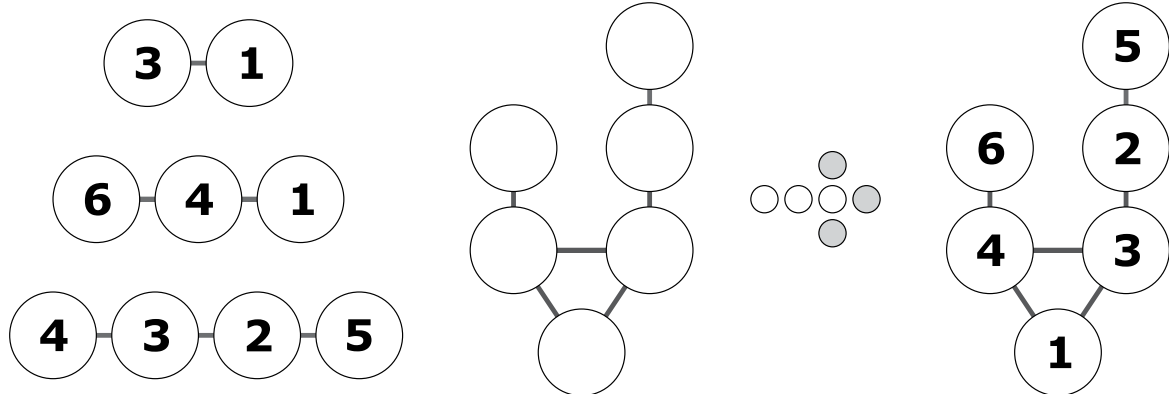
There are 3 separate puzzles using circles of different colours.

- 1 = 7**
- 2 = 8**
- 3 = 7**
- 4 = 10**
- 5 = 2**
- 6 = 4**



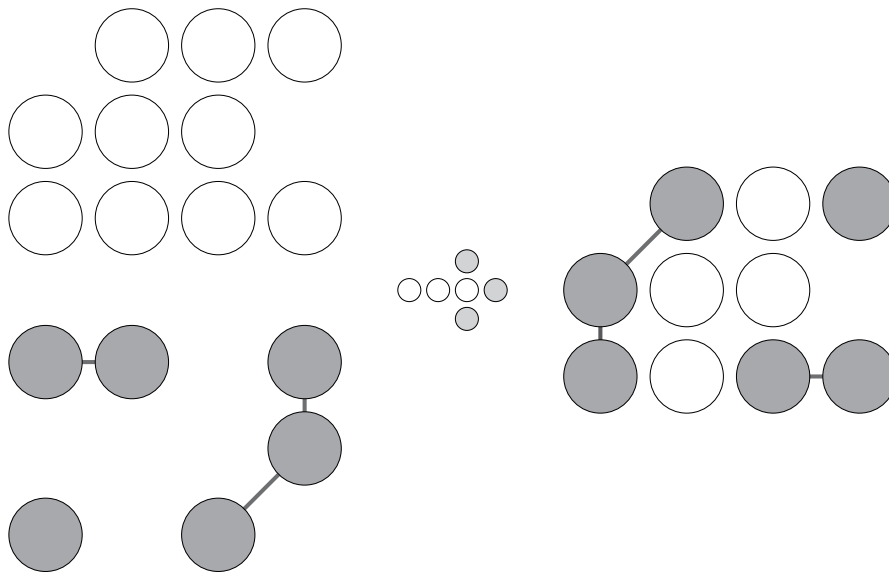
4. Beads

Place each of the numbers 1 through 32 in the 32 circles given. It must be possible to read each one of the 7 given sequences along connected circles.



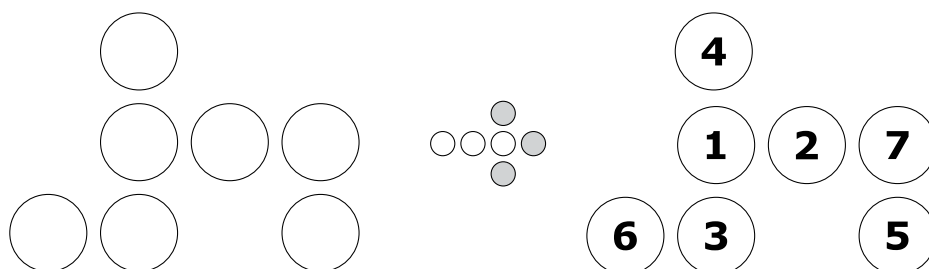
5. Battleships pool

Place the given set of battleships in the grid. The ships cannot touch each other even diagonally. You can rotate (90 or 180 degree), but cannot reflect the ships.



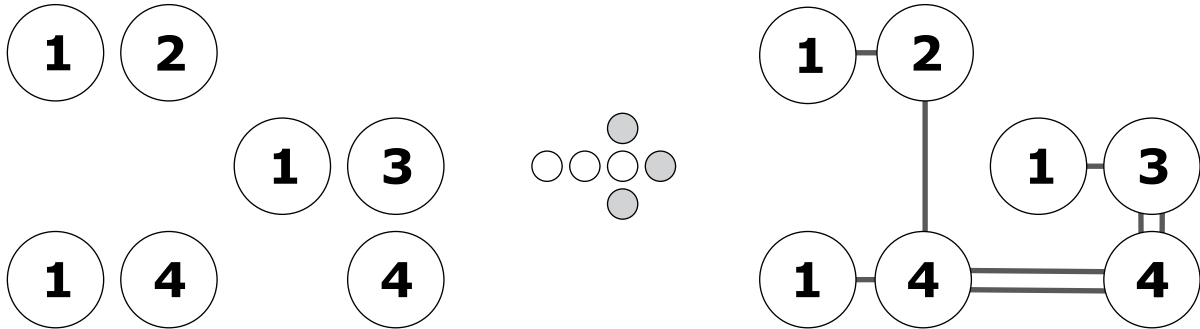
6. Distances

Fill the circles with the numbers 1 through 16 so that the distance between numbers X and $X+1$ always bigger than the distance between numbers $X-1$ and X . Distances between circles are measured from the centers of the circles. There are 2 separate puzzles using the circles of different colours.



7. Bridges

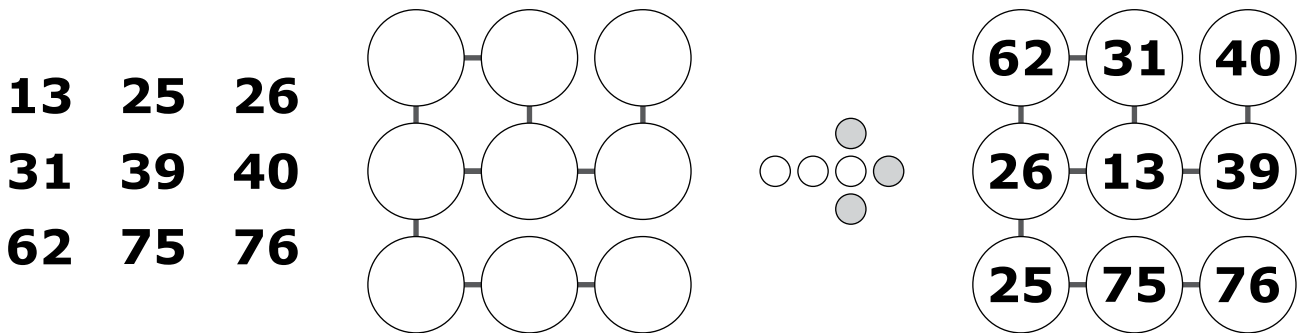
The numbered circles are the islands. Connect all of the islands into a single connected group by drawing the bridges between the islands. The bridges must begin and end at distinct islands, travelling a straight line in between. They must not cross any other bridges or islands. They may only run orthogonally. At most two bridges connect a pair of islands. The number of bridges connected to each island must match the number on that island.



8. Topology

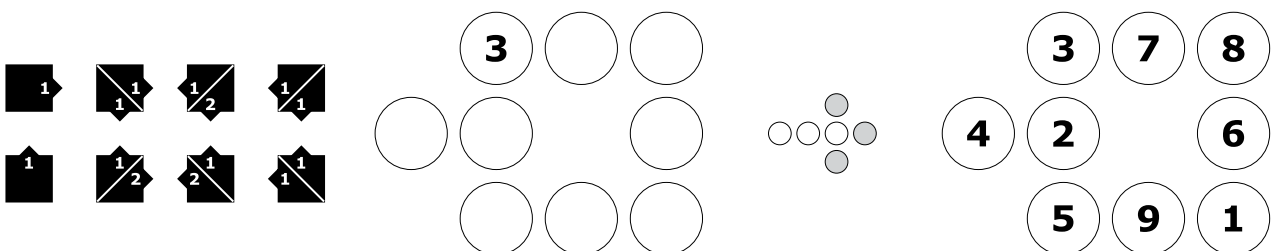
Fill in the grid with the given numbers. Two numbers can be connected if and only if any of the following conditions are met:

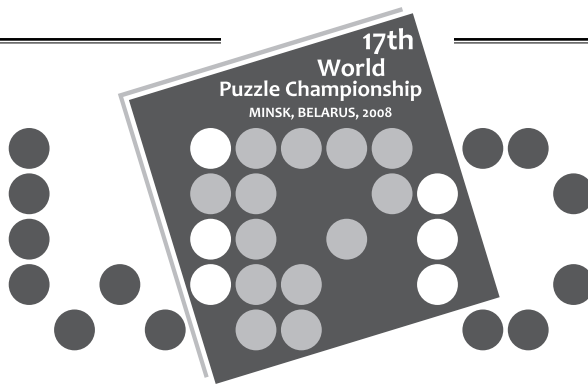
- if they're consecutive (11 and 12, 39 and 40 etc.)
- if one of them is exactly 2 or 3 times the other one (11 and 22, 19 and 57 etc.)
- if their digits are permuted (12 and 21, 38 and 83 etc.)



9. Navigrids

Fill in the grid with the numbers 1 to 11/12/9. Each number must be placed in the grid such that it can be reached from its preceding number using one of the movements provided. Each movement must be used once. Both the horizontal and vertical parts of a movement must be used. There are 3 separate puzzles using the circles of different colours.





Part II - individual

MIXTURE

October, 29TH

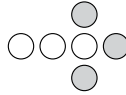
10:45 - 12:45

1	Zigzag	10+9
2	Striped snake	13
3	Triples	12+12
4	Rectangles	8
5	Numbers in squares	22+20
6	Product net	8+6
7	Make the crossword	12+14
8	Linequality	8+10
9	Thermometers	12+12
10	Easy as ABC	8+10+12
11	Domino castle	24
12	Countries	20
13	Capsules	10+15
14	Maximin patience	33
15	Trigon Puzzle	25+20
16	Hexakuro	22
17	ABC connection	6+7
	TOTAL	400

1. Zigzag

Draw a line passing through all squares only once between the two grey coloured squares. The line connects the middle points of the neighbouring squares (sharing an edge or corner). The letters following the line should come in W-P-C-W-P-C... order.

W	C	W	C	W	C
C	P	P	P	P	W
P	W	W	C	C	P
C	W	P	W	P	C



W	C	W	C	W	C
C	P	P	P	P	W
P	W	W	C	C	P
C	W	P	W	P	C

2. Striped snake

Draw a snake in the grid, 1 cell wide and 45 cells long. Its head, center and tail are given. The body of the snake cannot touch itself, not even diagonally. All the cells of the snake are numbered in order. Each cell of the snake with an odd number is black, and each cell of the snake with an even number is grey. The numbers on the right of the grid indicate the number of the black cells of the snake in the correspondent row. The numbers at the bottom of the grid indicate the number of the grey cells of the snake in the correspondent column.

	45								4
									1
	1								3
									3
									2
									3
									2
									2
									3
2	1	3	1	5	0	4	2	4	

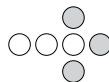


	45								4
									1
	1								3
									3
									2
									3
									2
									2
									3
2	1	3	1	5	0	4	2	4	

3. Triples

Place in the circles the numbers 1 through 10 (place each number twice to make three of each in total) so that the center points of each triple consisting of identical numbers were the endpoints and the center of an imaginary line segment.

	○		3	○			9	8
		10	○	○		○	○	
2	○	○		○			○	1
		○	○			7	○	○
	○		4		○	○		○
		5		○		○	6	

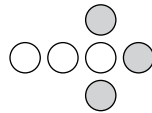


	9		3	9			9	8
		10	10	10		8	6	
2	4	3		8			7	1
		4	2			7	6	1
	3		4		7	2		1
		5		5		5	6	

4. Rectangles

By using the lines given in the grid divide the diagram into smaller rectangles. Each smaller rectangle must contain one number which corresponds to the number of square units it contains.

		8		2	4
	2		6		
4		6		4	

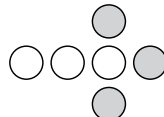


		8		2	4
	2		6		
4		6		4	

5. Numbers in squares

Fill the grid with the numbers 1 through 25, using each number once. Starting with 3, each number must have at least one pair of the neighbours (sharing an edge or corner) that give this number as their sum.

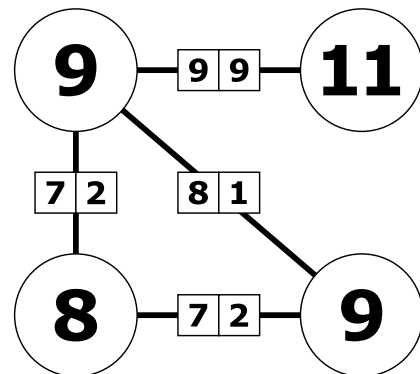
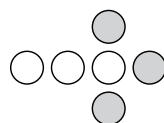
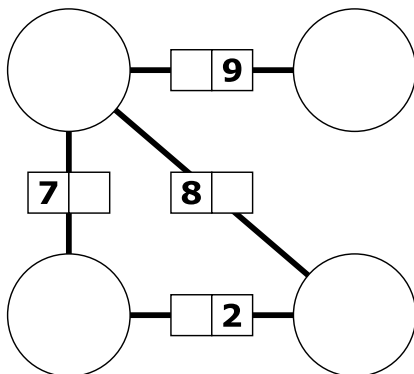
	17		25	
23		6		9
	8		4	
20		2		16
	12		18	



24	17	11	25	14
23	7	6	5	9
15	8	1	4	13
20	10	2	3	16
22	12	21	18	19

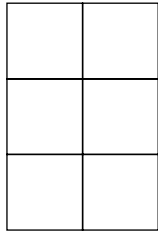
6. Product net

Put the numbers into the circles. In the rectangles on the line between two numbers their product is shown. Each product is a two-digit number with one missing digit.



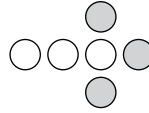
7. Make the crossword

Fill the grid with the letters A and B so that all the given words can be read from left to right or from top to bottom.



AA
AB
BA

ABA
BAA



A	B
B	A
A	A

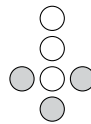
8. Linequality

Place in the cells the digits 1 through 9 (each once) so that equality and all inequalities were correct.

$$\boxed{} \quad \boxed{} > \boxed{} > \boxed{} > \boxed{} = \boxed{} > \boxed{} > \boxed{} > \boxed{}$$

$$\boxed{} / \boxed{} + \boxed{} + \boxed{} = \boxed{} + \boxed{} + \boxed{} - \boxed{}$$

$$<$$



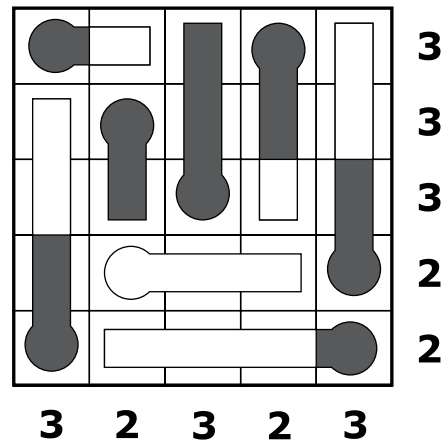
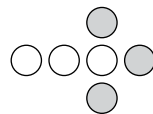
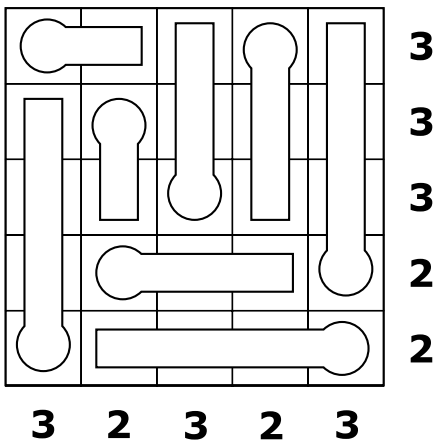
$$\boxed{4} \quad \boxed{9} > \boxed{7} > \boxed{5} > \boxed{3} = \boxed{6} > \boxed{8} > \boxed{2} > \boxed{1}$$

$$/ \quad + \quad + \quad = \quad + \quad + \quad -$$

$$<$$

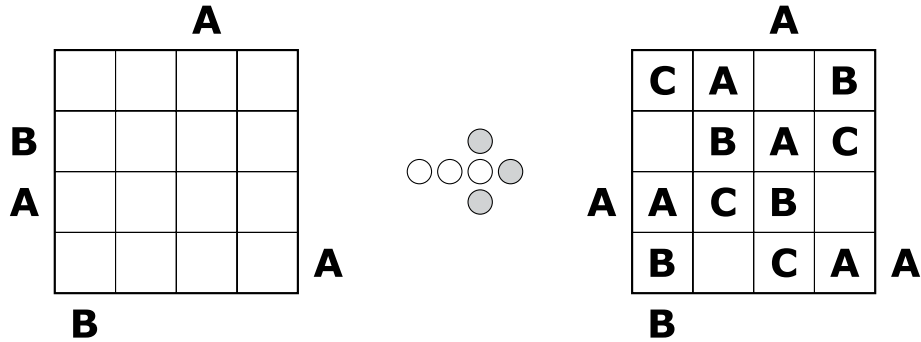
9. Thermometers

There are thermometers in the grid, all of which have their own level of mercury. The mercury always starts from the rounded end and fills toward the other end. There may be empty or full thermometers as well. Numbers around the grid indicate the number of squares in the given row or column that contain mercury.



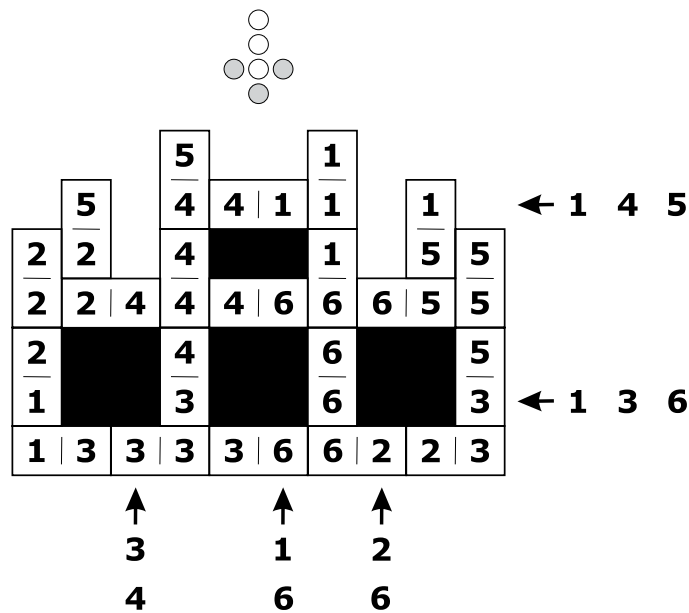
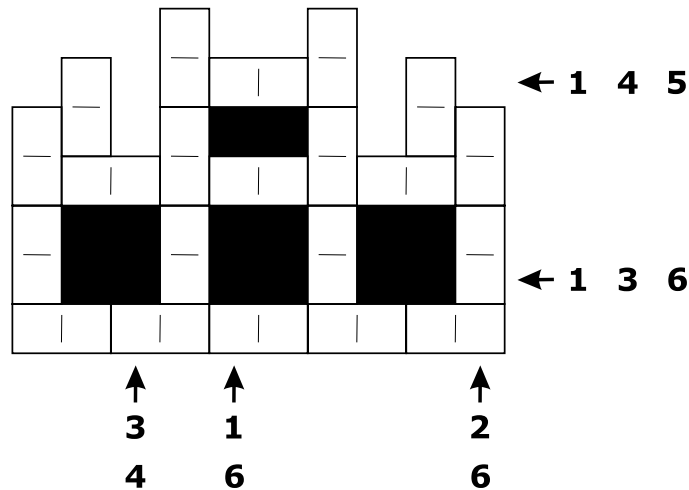
10. Easy as ABC

Fill in the grid so that in each row and column the letters A, B and C appear exactly once. Letters around the grid indicate the first letter visible from the given direction.



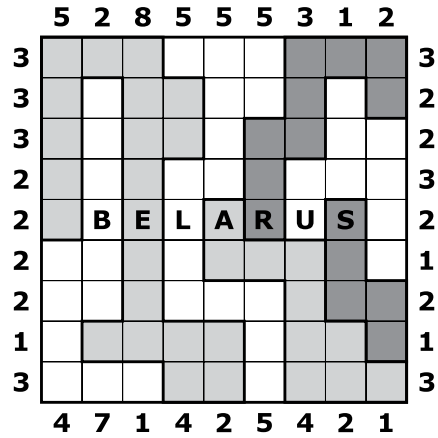
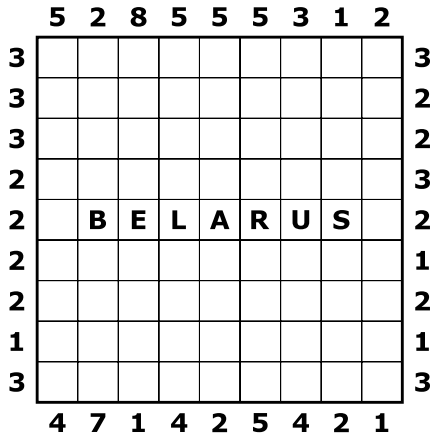
11. Domino castle

The figure shows a castle that was built up of the given set of dominoes. Half-dominoes that share an edge have to contain the same number. Numbers around the figure reveal what numbers exist on the domino halves in the given row or column. Find out the original arrangement.



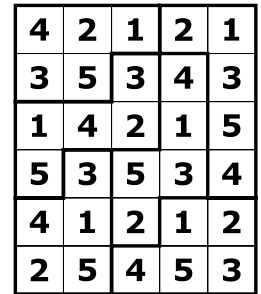
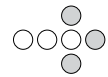
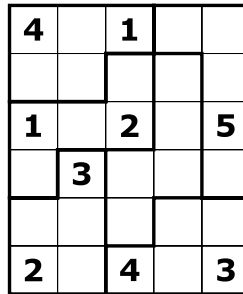
12. Countries

Divide the grid into five areas. Each area must contain a letter. Digits outside the grid show the quantity of cells belonging to the area that touches the border in corresponding place. Each area must touch the border of the grid.



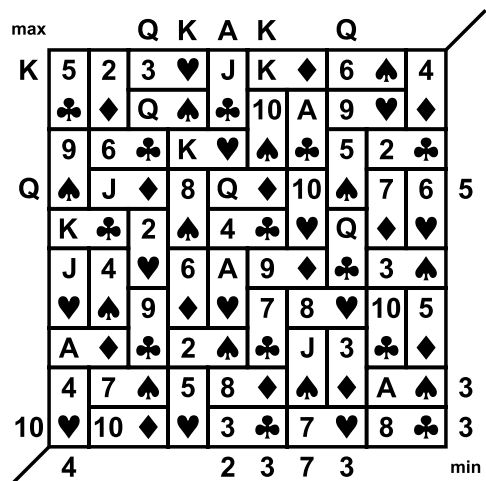
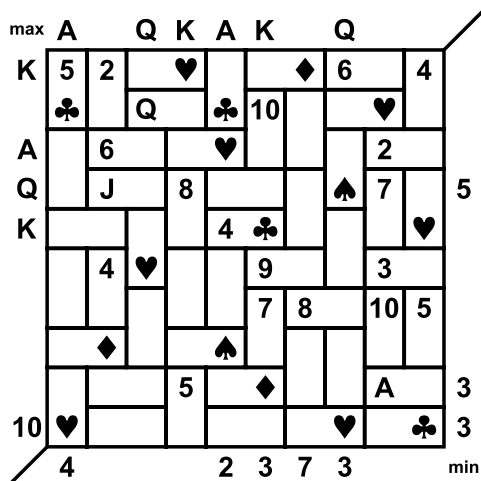
13. Capsules

Put numbers between 1-5 into the empty cells so that no two neighbouring cells (sharing an edge or corner) contain identical numbers. Each pentamino contains one of each number 1 through 5.



14. Maximin patience

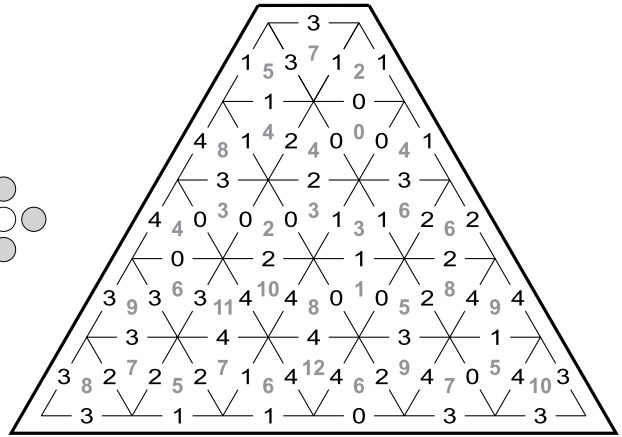
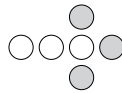
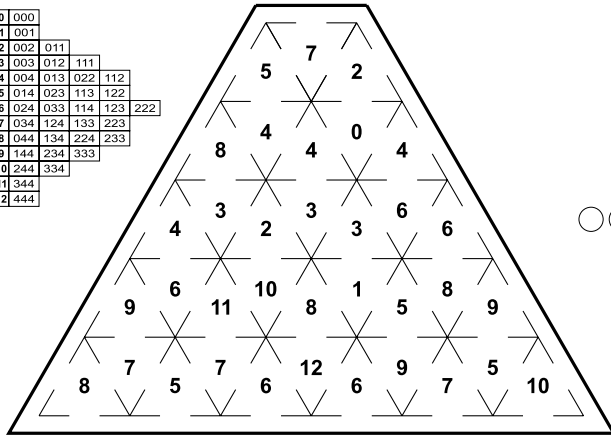
Place 50 cards out of the full 52-card deck in the grid. Each card will occupy two cells. Maximum and minimum values of the cards are given for some rows and columns. Values of the cards cannot be repeated within single row or column. Cards with the same values, as well as the cards of the same suit, cannot share an edge, though they can touch diagonally. After filling all the cells, find the two unused cards.



15. Trigon Puzzle

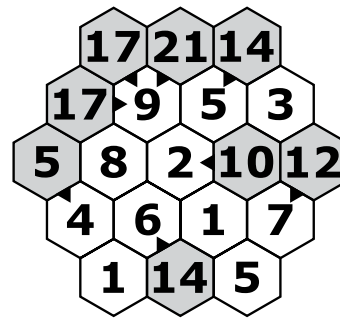
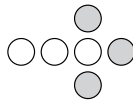
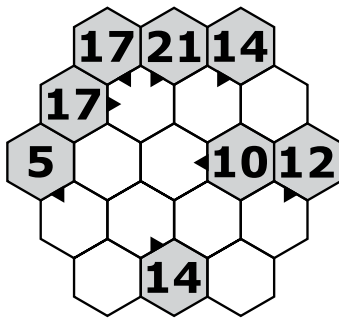
A set of triangular dominoes is put together in various shapes and sizes. There is a number on each side of the triangle and a central number which is the sum of the side numbers. Where two sides meet the number is the same. With each puzzle, a table of numbers is provided showing all the possible combinations according to the central number. Each combination is used exactly once.

0	000
1	001
2	002 011
3	003 012 111
4	004 013 022 112
5	014 023 113 122
6	024 033 114 123 222
7	034 124 133 223
8	044 134 224 233
9	144 234 333
10	244 334
11	344
12	444



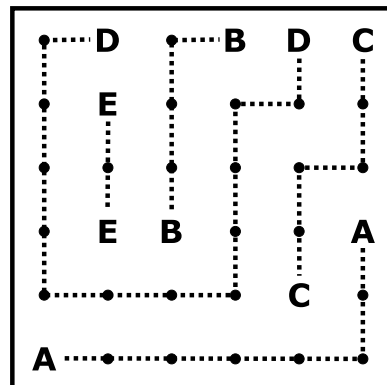
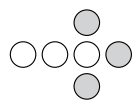
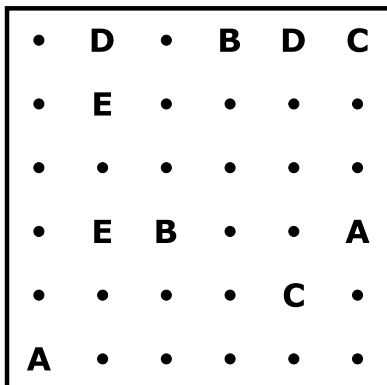
16. Hexakuro

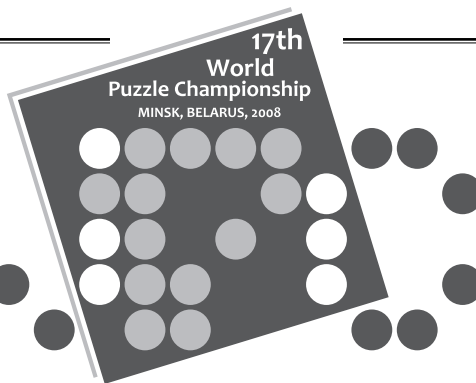
Place a single digit 1 to 9 into each one of the empty cells so that the sum of the digits in each direction that an arrow points to equals the value given in the corresponding grey square. No digit is repeated within a consecutive line of white cells.



17. ABC connection

Connect the same letters using only horizontal and vertical lines. Lines should not intersect or cross each other and all dots should be used.





Part III - team

SIX SQUARES

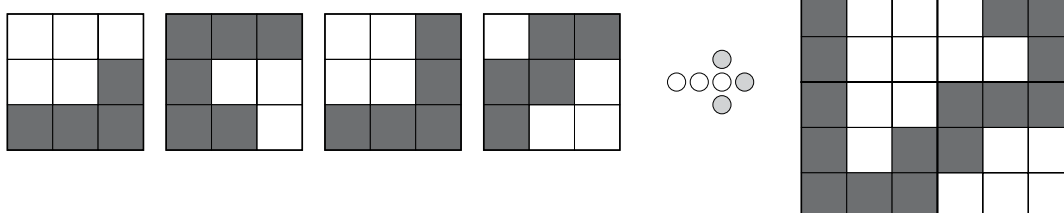
October, 29TH

13:00 - 13:30

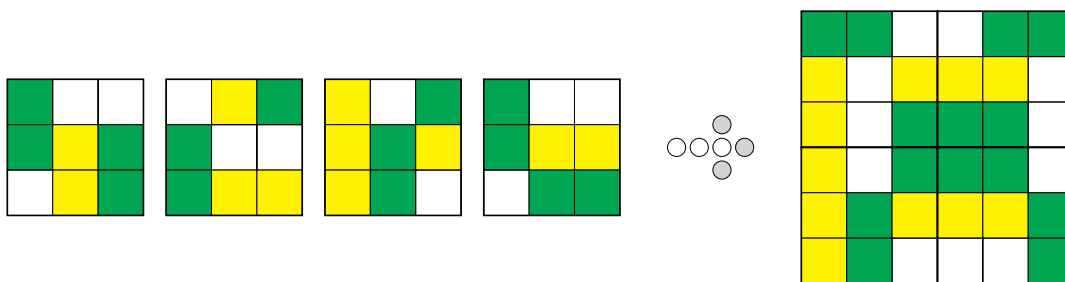
1	Black line	50
2	Rectangles	45
3	Tetraminoes	40
4	Pentaminoes	55
5	Three areas	50
6	Vertices of the squares	60
	TOTAL	300
	ORDER BONUS	

Construct six squares 3x3 from the given fragments so that:

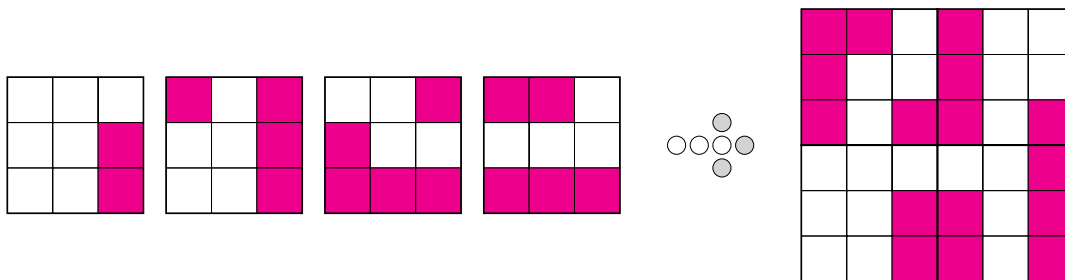
1. There is a single closed black line of the 1 cell width, not touching itself even diagonally;



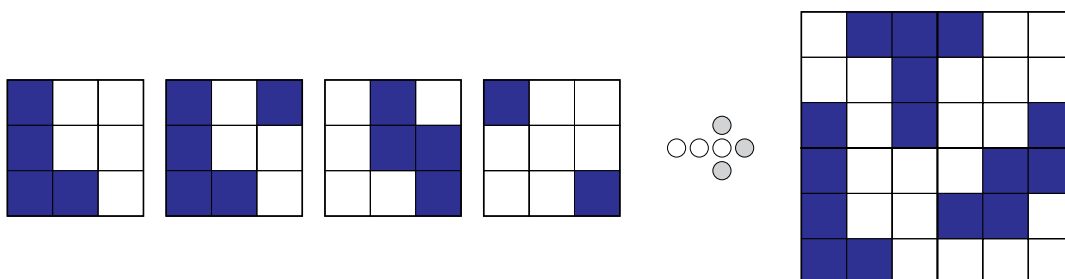
2. There are 17 rectangles (not squares!) of each of the following colours: white, yellow and green. Rectangles of the same colour can touch at most by the corners;



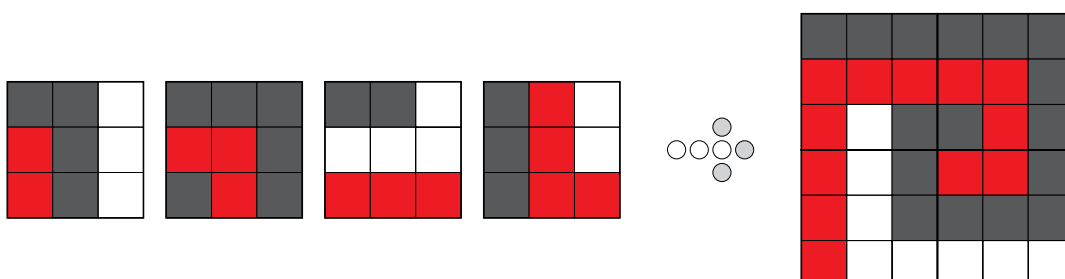
3. There are 17 pink tetraminoes, not touching each other even diagonally;



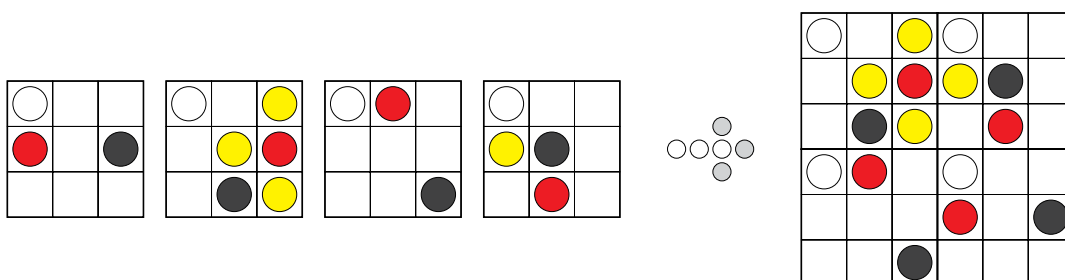
4. There are 12 different purple pentaminoes, not touching each other even diagonally;

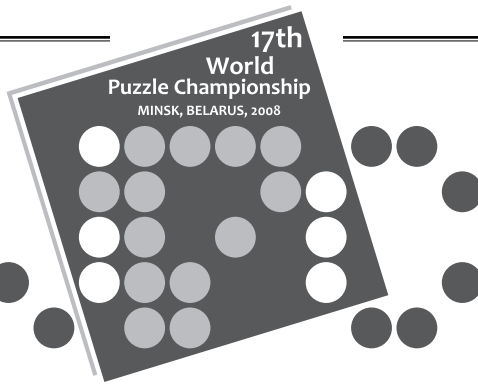


5. There are exactly three orthogonally connected areas of the following colours: white, red and black;



6. Circles of the same colour are the vertices of the squares.





Part IV - team

October, 29TH

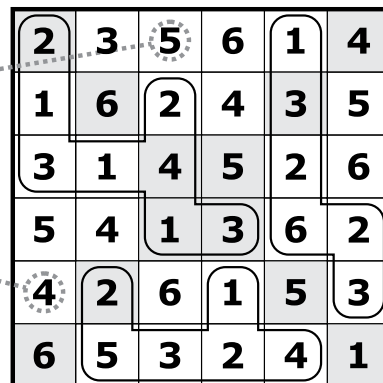
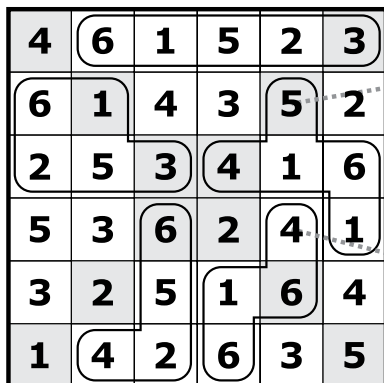
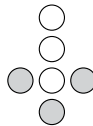
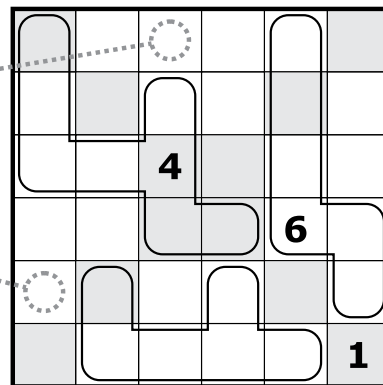
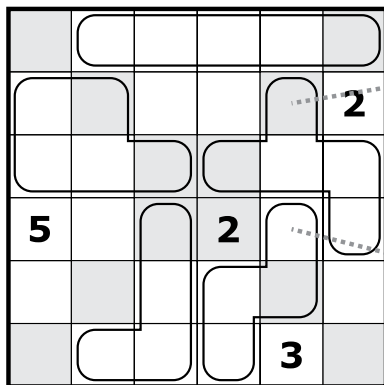
15:00 - 16:00

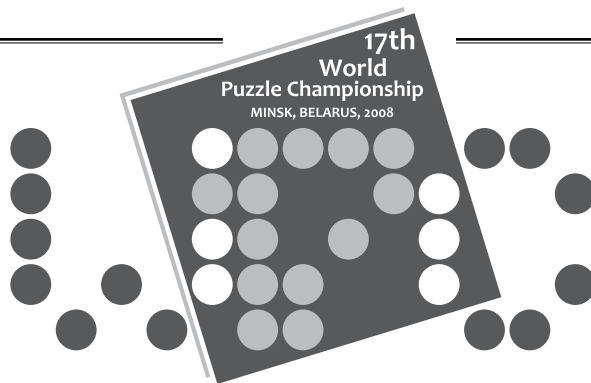
WEAKEST LINK

Magic 17 (4 x (25+30+45+50) + 150 points) + ORDER BONUS

Fill the grids with the numbers 1 through 6 (7). Each row, column and main diagonal must contain these numbers exactly once. Sum of the numbers in each outlined area must be equal to 17.

You can get the additional given digits taken from the solved puzzles along the straight dotted lines. Each puzzle 2-4 gives one given digit to the team puzzle.





Part V - individual

October, 29TH

16:15 - 16:50

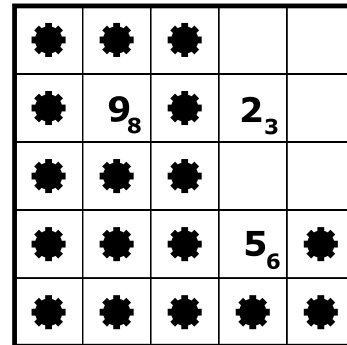
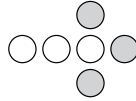
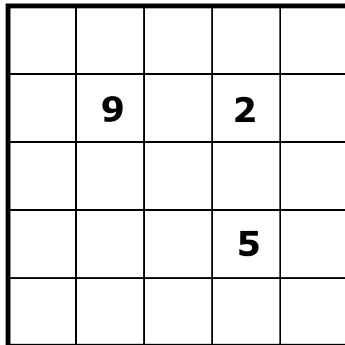
FALSE PART

All given numbers in and around the grids in this part are false.
 They're either one more or one less than the actual numbers.
 All the numbers written in words in the instructions are true.

1	Minesweeper	10
2	Arrows	24
3	Anglers	9
4	Arythmetic square	12
5	Sumscrapers	15
6	Magnets	17
7	Triangle sums	10
8	Battleships	17
9	Cave	16
	TOTAL	130

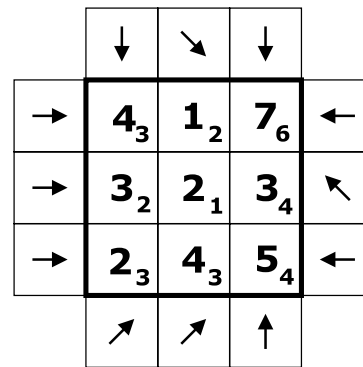
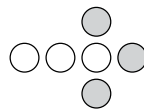
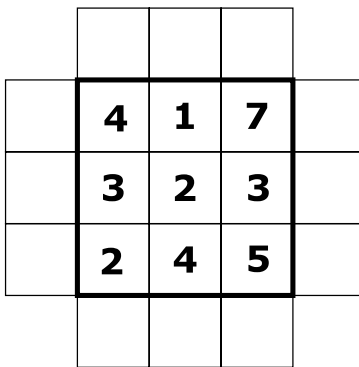
1. Minesweeper

Locate in the grid seventeen mines. Numbers in the grid indicate the quantity of the mines in the cells surrounding the numbers. There are no mines in the cells with the numbers.



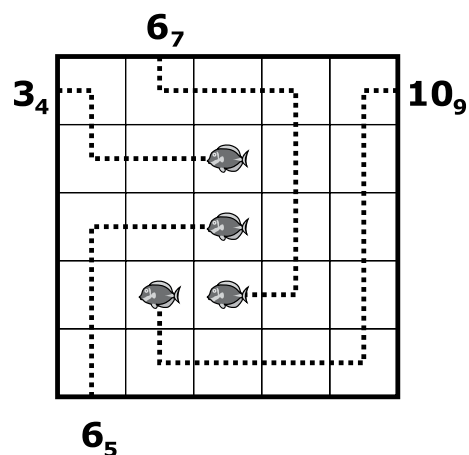
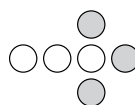
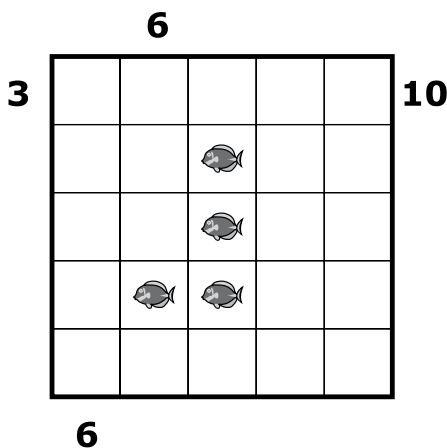
2. Arrows

Put the arrows in the empty squares. All arrows point towards the grid (in one of the eight compass directions), and the numbers in the grid indicate the number of arrows facing them.



3. Anglers

Six fishermen, represented by the numbers, are sitting around the lake. Each of them has the fish on his tackle. Numbers show the length of the line that connects fisherman and his fish. The lines cannot cross and touch themselves and each other. The lines go through every cell of the grid.



4. Arithmetic square

Place in the white cells the numbers one through nine, each once. Given numbers show the result of the corresponding expression. The priority of the operations is usual - first multiplication and division, then addition and subtraction ("two + two x two" equals six, not eight).

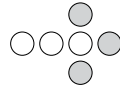
$$\square \times \square = 1$$

$$+ \quad \times$$

$$\square - \square = 2$$

$$= \quad =$$

$$5 \quad 4$$



$$2 \times 1 = 1_2$$

$$+ \quad \times$$

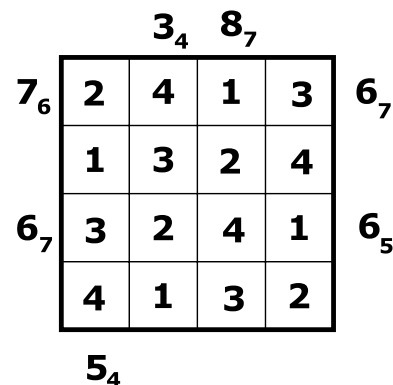
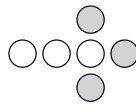
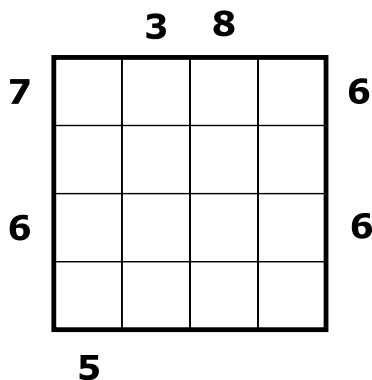
$$4 - 3 = 2_1$$

$$= \quad =$$

$$5_6 \quad 4_3$$

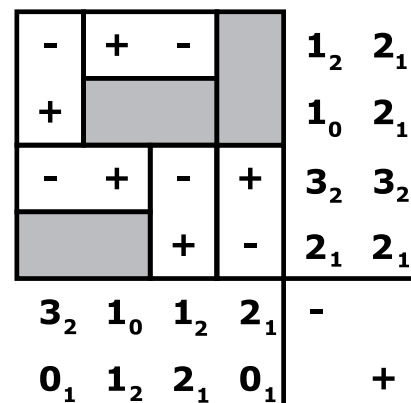
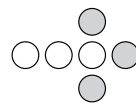
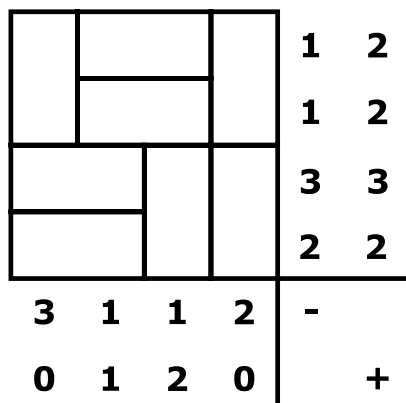
5. Sumscrapers

The grid symbolises a group of skyscrapers. Each row and column contains skyscrapers of different heights (one~six). The numbers outside the grid indicate the sums of the heights of all skyscrapers that are visible from that direction.



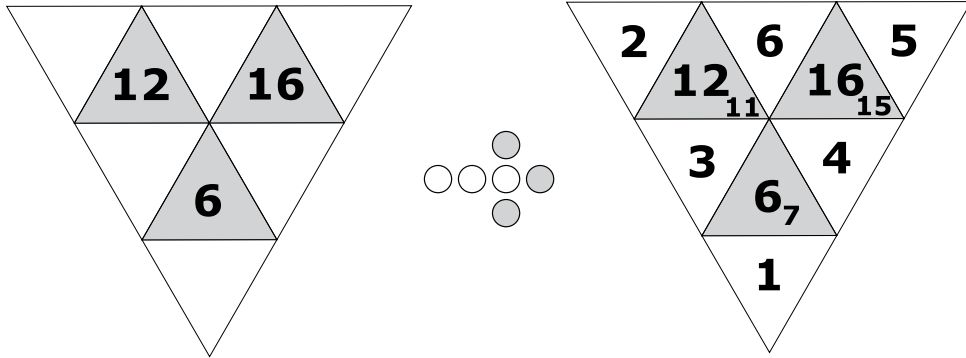
6. Magnets

The grid is made up of magnetic and non-magnetic plates. Each magnetic plate has two halves: one positive (+) and one negative (-). Halves with the same symbol cannot be connected horizontally or vertically. The numbers outside the grid indicate the amount of magnetic halves in that particular row or column.



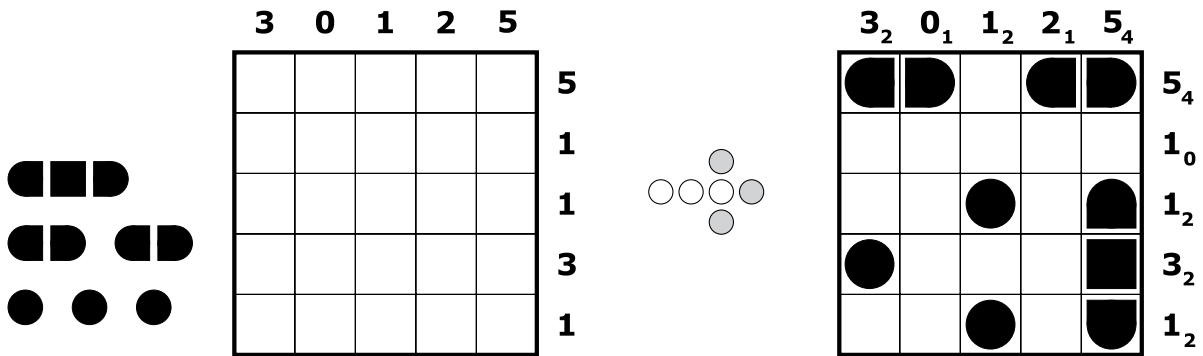
7. Triangle sums

Place in the white triangular cells the numbers one through ten, each once. The numbers in grey triangles show the sum of numbers in adjacent cells.



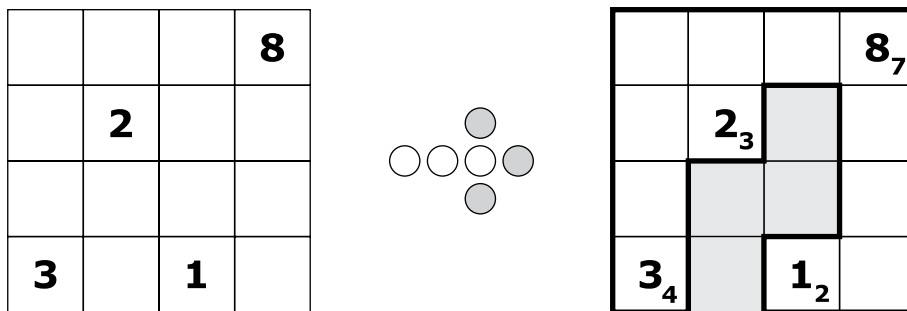
8. Battleships

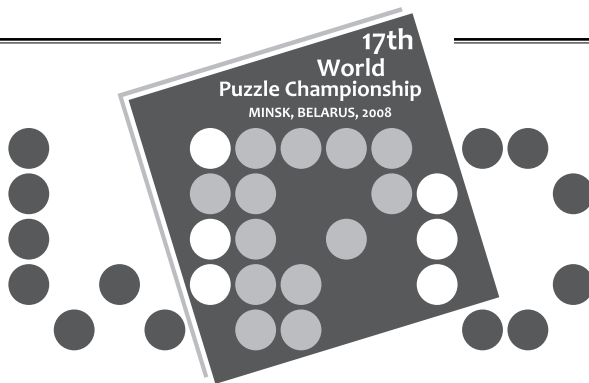
Locate the position of the standard "Battleships" fleet. The ships cannot touch each other, not even diagonally. Numbers outside the grid show the quantity of the cells occupied by the ships in that particular row or column. Ships cannot occupy the given water squares.



9. Cave

Along the gridlines draw the closed single loop containing some of the grid squares so that all the numbers are inside the loop and each number is equal to the number of grid squares visible from it, including the cell with the number itself. A grid square is visible from a number if it is horizontally or vertically aligned with it and all the squares between them are inside the loop.





Part VI - individual

GIANT PART

October, 29TH

17:00 - 18:00

The grids for all puzzles of this part have the size 17x17.

1	Pills	50
2	Different neighbours	42
3	Star battle	47
4	Tents	38
5	Every second turn	23
	TOTAL	200

1. Pills

Place in the pills the numbers 1 through 17, each once. Two pills will have zero value. Numbers outside the grid indicate the sums of the values of all pills located in that particular row or column.

The left grid shows a 5x5 grid with pill shapes. Row sums are 7, 6, 5, 8, 7. Column sums are 5, 8, 7. The right grid shows the same grid with pills containing numbers 1, 2, 3, 4, 5. A legend shows pill shapes with 1, 2, 3, 4, 5 pills.

2. Different neighbours

Fill the grid with the numbers from 1 to 4. The cells with the same number cannot touch each other, not even diagonally.

The left grid shows a 6x6 grid with numbers 1, 2, 3, 4. The right grid shows the same grid completely filled with numbers 1, 2, 3, 4. A legend shows a 5-dot pattern.

3. Star battle

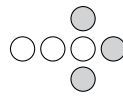
Place in the grid one-cell stars, so that each row, each column and each shape outlined by thicker lines contain exactly three stars. The stars cannot touch each other, not even diagonally. The black square doesn't contain a star.

The left grid shows a 10x10 grid with a black square at (10, 10). The right grid shows the same grid with stars placed in cells. A legend shows a 5-dot pattern.

4. Tents

Locate the tents in the grid. Each tree is connected to exactly one tent, and each tent is connected to exactly one tree. Trees and their tents are found in a horizontally or vertically adjacent squares. Tents do not touch each other, not even diagonally. The numbers outside the grid reveal the total number of tents in the corresponding row or column.

1								
1		🌲			🌲		🌲	
2	🌲							
2						🌲		
2			🌲					
2	🌲							🌲
1		🌲			🌲			
2	🌲		🌲					🌲
	2	1	2	1	2	2	1	2

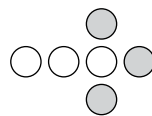


1			⛛					
1		🌲		⛛	🌲			🌲
2	🌲	⛛						⛛
2			⛛		⛛	🌲		
2	⛛		🌲					⛛
2	🌲		⛛		⛛			🌲
1	⛛	🌲			🌲			
2	🌲		🌲	⛛		⛛		🌲
	2	1	2	1	2	2	1	2

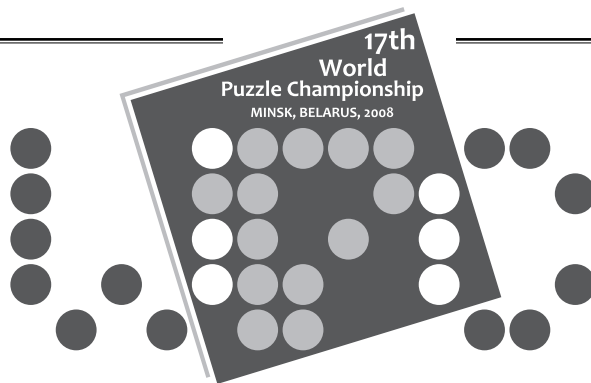
5. Every second turn

Draw a single closed loop that passes through every square and never crosses itself. The path travels only horizontally and vertically. Every second turn in the path must be in a square containing a circle. Every square containing a circle must have a turn. The loop doesn't pass through the black square.

○				○	
		○			
			○		
		○			
	○			○	
			○		○



○				○	
		○			
			○		
		○			
	○			○	
			○		○



Part VII - individual

SPRINT

October, 30TH

10:00 - 10:30

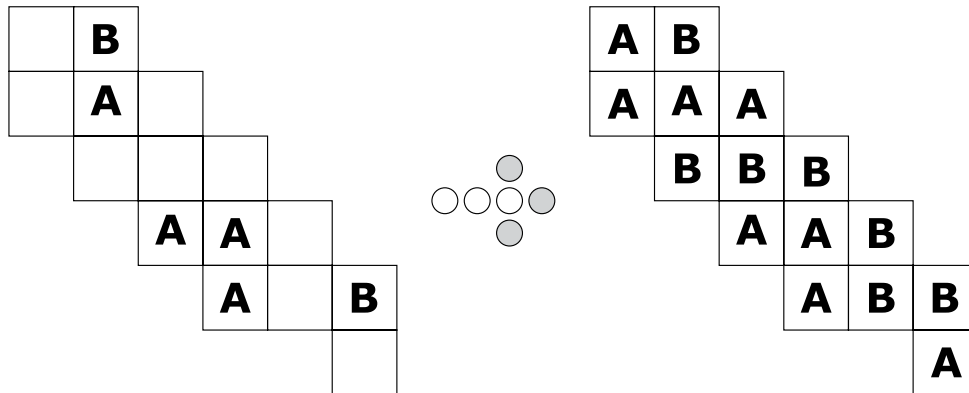
The scoring for this part depends on the number of the solved puzzles.

Magic snail	1	3
Kropki	2	7
123 connection	3	11
Mumbo-jumbo crossword	4	16
Chaos	5	21
Three dates	6	27
Sea by numbers	7	33
Areas	8	40
Products	9	47
Hundred	10	55
Simple loop	11	63
Crypted square	12	72
Two and two	13	81
AYDA	14	90
Paper clips	15	100
Nurikabe	16	110
Triangles	17	120

TIME BONUS

4. Mumbo-jumbo crossword

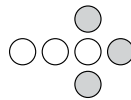
Mumbo-jumbo alphabet consists of only two letters: A and B. Create the crossword containing all possible 2 and 3-lettered words of Mumbo-jumbo dictionary. The words must be found left-to-right (across), and top-to-bottom (down).



5. Chaos

Fill the squares in the grid with the numbers 1 through 4. There cannot be 3 consecutive identical numbers in any direction, not even diagonally. Also, assuming each number to be a chess knight, two identical numbers cannot lie in squares where they would theoretically be threatening each other.

4	1	1	3	3
	2			4
3	2			
3			1	



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

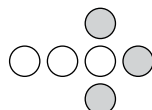
6. Three dates

Define the three dates, the digits of which are coded by letters, knowing that the periods - in number of days - between first and second dates and between second and third dates are equal. All dates are taken from the current year. Same letters always represent same digits. Different letters represent different digits. The days are given before the month, in the format: DD.MM.

AB.AC

DB.EA

ED.ED



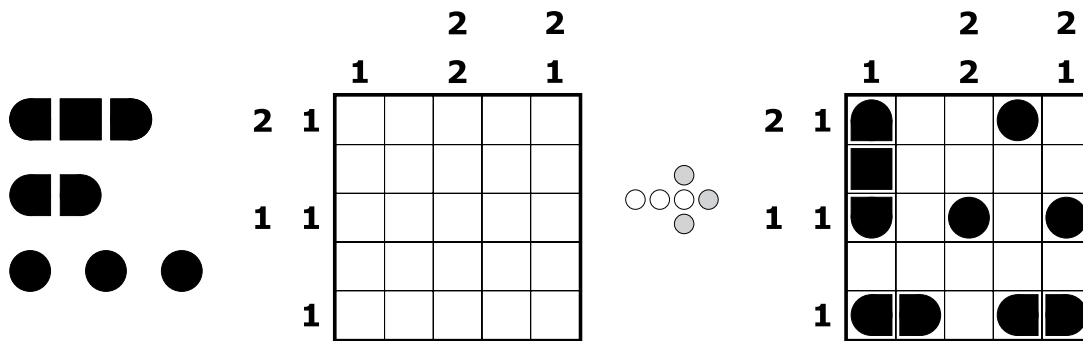
03.09

23.10

12.12

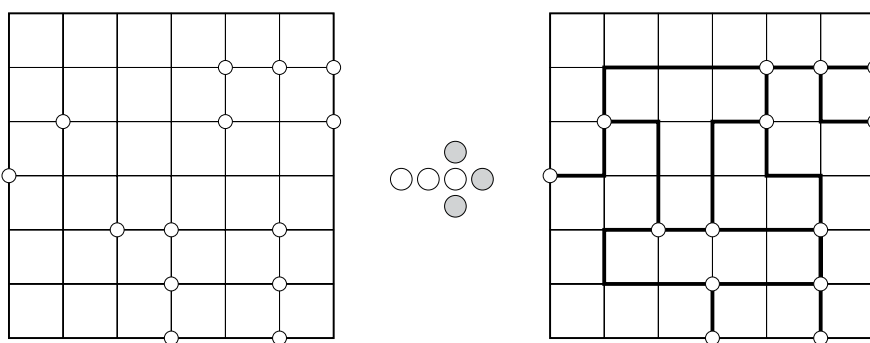
7. Sea by numbers

Place the given fleet into the grid so that the ships don't touch each other, not even diagonally. Digits above and at the left of the diagram show 'in order' the size of blocks of "sea" cells in corresponding row or column.



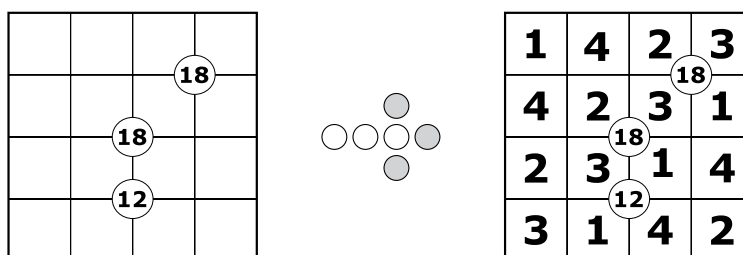
8. Areas

Divide the square along the grid lines into eight areas of different sizes (1 to 8). All nodes where three borders meet are marked. There are no nodes where four borders meet.



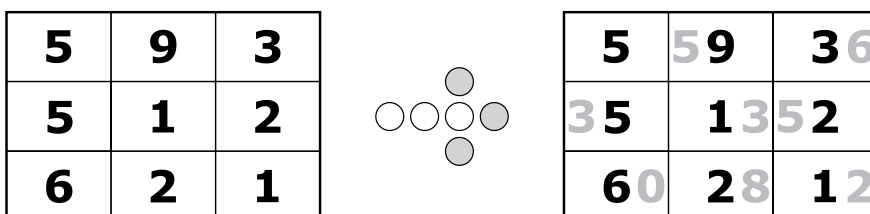
9. Products

Fill the grid with the digits 1 through 5, such that each row and column contains each of these digits exactly once. The numbers in the circles indicate the products of four digits in the cells partly covered by these circles.



10. Hundred

Fill the grid placing digits into the left or right of the given digits in the squares so as to create 2-digit numbers or leaving the squares the way they are, so that the total of all numbers in every row and every column equals to 100. The numbers in cells must contain the digits which are already shown.



15. Paper clips

Place any number of paper clips of three sizes in the grid. Paper clips can not touch each other, not even by the corners of the cells they're placed. Outside the grid the number of cells with rounded parts in corresponding rows and columns is given.

The diagram shows a 6x6 grid with row counts on the right (4, 3, 0, 3, 1, 4) and column counts on the bottom (4, 0, 3, 1, 4, 0, 3). A legend shows three clip sizes: a small circle, a medium oval, and a large rectangle. The solved grid shows four large clips in the top row, one large clip in the bottom row, and three medium clips in the rightmost column. The row counts are satisfied: Row 1 has 4 rounded parts, Row 2 has 3, Row 3 has 0, Row 4 has 3, Row 5 has 1, and Row 6 has 4. The column counts are also satisfied: Column 1 has 4, Column 2 has 0, Column 3 has 3, Column 4 has 1, Column 5 has 4, and Column 6 has 0.

16. Nurikabe

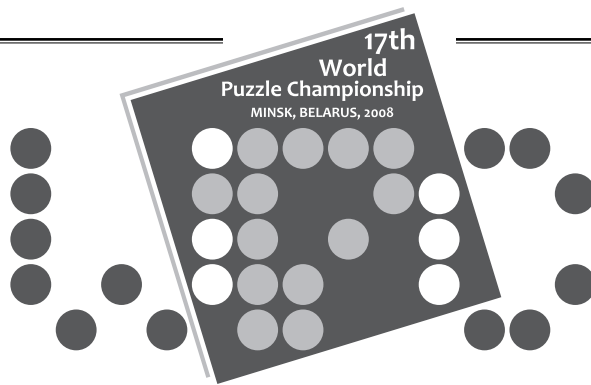
Each number in the grid is part of an island, such that the numbers in the squares represents the size of the island (in number of squares) including the square that contains the number. The squares that make up an island must be connected horizontally and/or vertically. Islands cannot touch other horizontally or vertically, but they can touch diagonally. The remaining squares represent water, and must be painted black. The water squares form a completely connected path around the islands, where successive squares share an edge either horizontally or vertically. No 2x2 region can be completely covered by water.

The diagram shows a 6x6 grid with numbers in the top-left quadrant: (1,1)=2, (2,4)=3, (3,1)=2, (4,3)=4, (5,4)=1. The solved grid shows islands of sizes 2, 3, 2, 4, and 1. Water squares are shaded black, forming a path around the islands. The islands are: a 2-square island at (1,1)-(1,2), a 3-square island at (2,4)-(3,4)-(4,4), a 2-square island at (3,1)-(3,2), a 4-square island at (4,3)-(5,3)-(5,4)-(6,4), and a 1-square island at (5,4).

17. Triangles

Place some half cell triangles in the grid, not touching each other even diagonally. Numbers outside the grid indicate the number of hypotenuses of each orientation (/ , \) in the corresponding row and column.

The diagram shows a 4x4 grid with row counts on the right (3, 1, 1, 0) and column counts on the bottom (2, 1, 1, 1) and (0, 2). A legend shows two triangle orientations: a top-left triangle and a bottom-right triangle. The solved grid shows triangles placed in the top-left and bottom-right corners of the grid. The row counts are satisfied: Row 1 has 3 hypotenuses, Row 2 has 1, Row 3 has 1, and Row 4 has 0. The column counts are also satisfied: Column 1 has 2, Column 2 has 1, Column 3 has 1, and Column 4 has 1.



Part VIII - individual

ASSORTED

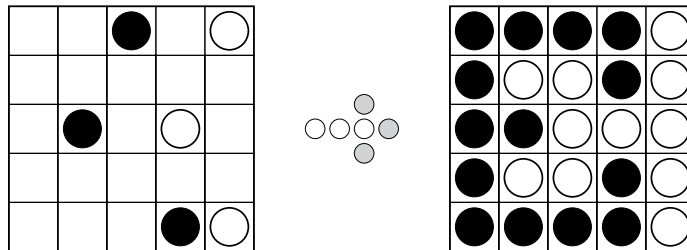
October, 30TH

10:40 - 12:40

1	Black and white	22
2	Half-dominoes	15
3	ABC	34
4	Heterocut	16
5	Pintamino	9+9
6	Hitori	20+14
7	Knight movement	22
8	Kakuro	16
9	Hexiom	24+19
10	Patience	20
11	Numbers in arrows	10+17
12	Put the squares	9+12
13	Pentamino in half	22
14	Mastermind in line	12
15	Two ways	20
16	Number loop	22
17	Boomerang	16+20
	TOTAL	400

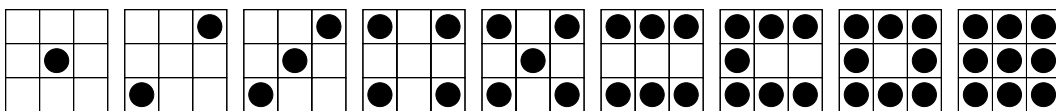
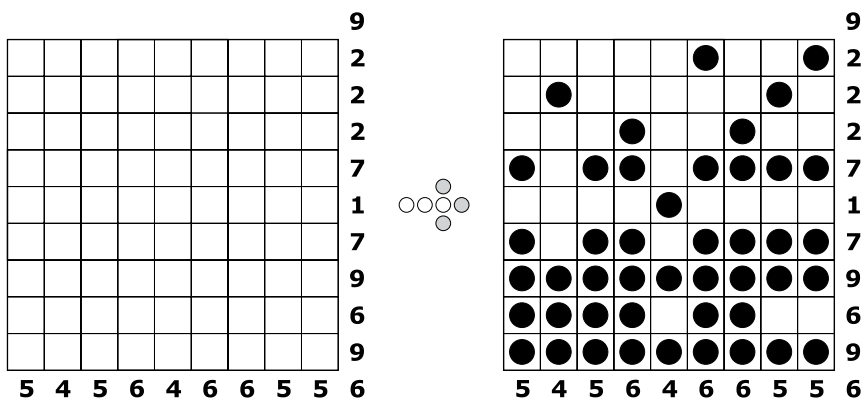
1. Black and white

Each square in the grid below will contain either a black or a white circle. When filled in correctly, there will be a single connected group of white circles and a single connected group of black circles. Cells are connected horizontally and vertically. Nowhere in the grid can there be a two by two group of squares all containing the same color circles.



2. Half-dominoes

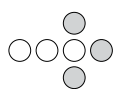
Put all the nine half dominoes into the puzzle grid so that the sum of the dots in certain rows, columns, or diagonals be identical with the given numbers assigned to that certain row, column or diagonal. The pieces cannot overlap, they also may not be rotated or mirrored.



3. ABC

All 26 characters have a different value from 1 to 26. Next to each word the sum of its letters is given. Punctuation signs separate words, as well as the spaces. Find the value of all letters.

- BADGE** 25
- BED** 6
- CD** 5
- FACE** 22
- HI** 15
- ICE** 13

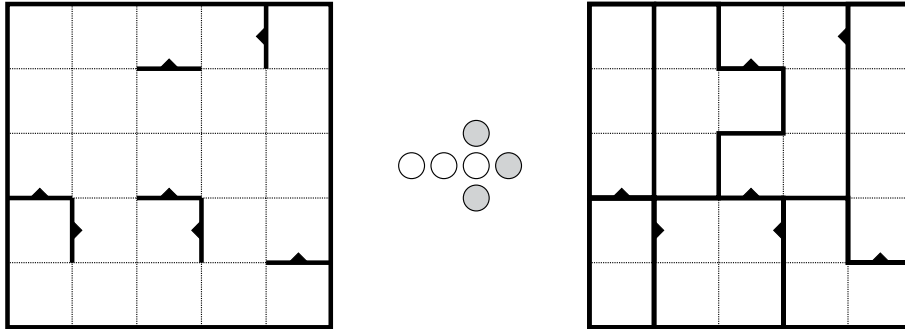


A	B	C	D	E	F	G	H	I	J
10	3	4	1	2	6	9	8	7	5

A	B	C	D	E	F	G	H	I	J

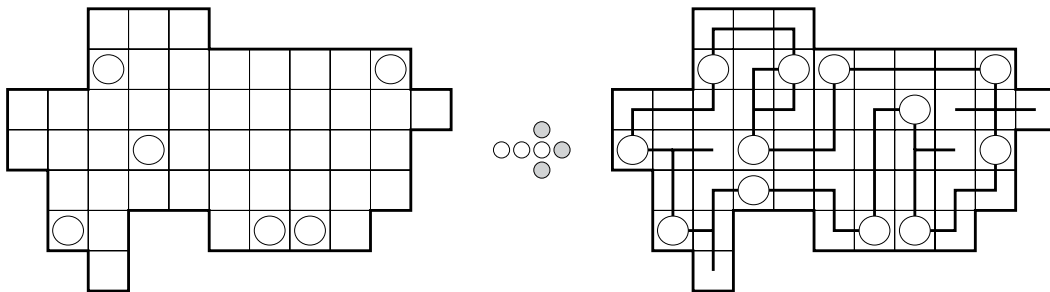
4. Heterocut

Divide the grid into some different shapes of 2, 3, 4, or 5 squares. Some cuts are already made. Arrows point to the shape of bigger area. Shapes cannot be identical even being rotated/reflected.



5. Pintamino

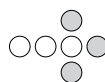
Each pentamino element has two pinholes as shown in the full pentamino set. There are 6 pins that are already placed in the grid. Add another 6 pins and place all 12 pentaminoes on them, within the boundaries of the grid. Each pentamino must be put on one originally placed pin and one added pin. Each pin must hold exactly two pentaminoes. Pentamino elements cannot overlap anywhere except the pinholes, and must fill all the grid. Rotating/mirror imaging of the given pentamino set is allowed.



6. Hitori

Paint out some cells so that there are no duplicate numbers in any row or column. Painted cells cannot share an edge and all the unpainted cells must be connected horizontally or vertically in a single group.

2	4	7	1	3	1	2	6
8	6	3	2	7	5	8	4
2	1	8	2	6	4	3	1
6	8	1	4	8	3	5	1
5	7	4	1	2	5	7	3
4	3	2	7	1	6	8	5
6	5	1	5	8	1	6	3
1	6	7	3	7	8	1	2

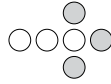


2	4	7	1	3	1	2	6
8	6	3	2	7	5	8	4
2	1	8	2	6	4	3	1
6	8	1	4	8	3	5	1
5	7	4	1	2	5	7	3
4	3	2	7	1	6	8	5
6	5	1	5	8	1	6	3
1	6	7	3	7	8	1	2

7. Knight movement

The chess knight will visit each cell exactly once. It will start from 1 and end at 64. Some of the numbers are already given. Write down all missing numbers.

19		15		35			
						55	
	17	22		54			45
			39				
1	64	7		41	48	31	52
	5				51	42	

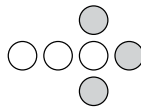


19	24	15	12	35	26	59	56
16	13	18	25	60	57	34	27
23	20	61	14	11	36	55	58
62	17	22	37	54	33	28	45
21	38	63	10	3	44	53	32
6	9	2	39	50	29	46	43
1	64	7	4	41	48	31	52
8	5	40	49	30	51	42	47

8. Kakuro

Enter a single digit from 1 to 9 in each empty square so that the horizontal sums of the digits will equal the number given on the left, and the vertical sums of the digits will equal the number given above. No digit can be repeated within sums.

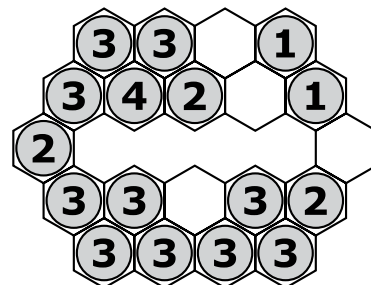
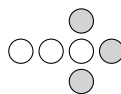
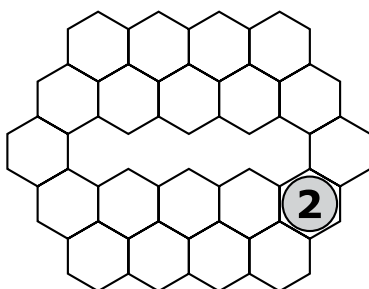
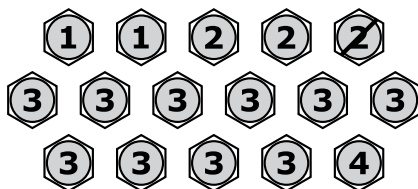
	12		28	19
30				
		7		
	5			
11				
24				



	12		28	19
30	6	9	8	7
	1	7	6	1
	5			
11	2	1	5	3
24	3	4	9	8

9. Hexiom

Place all given grey numbered honeycombs in the grid. Each number should indicate the quantity of the grey honeycombs around.



10. Patience

Place in the grid 36 cards, so that the cards of the same suit or with the same value do not touch each other even diagonally. The symbols outside the grid indicate suits and values of all cards in corresponding rows and columns.

Left Grid Clues:

	6	6	6				
	6	7	7	7	7		
9	J	9	8	10	8	10	8
10	K	10	Q	J	9	Q	Q
J	A	A	A	K	J	A	K

Right Grid Clues:

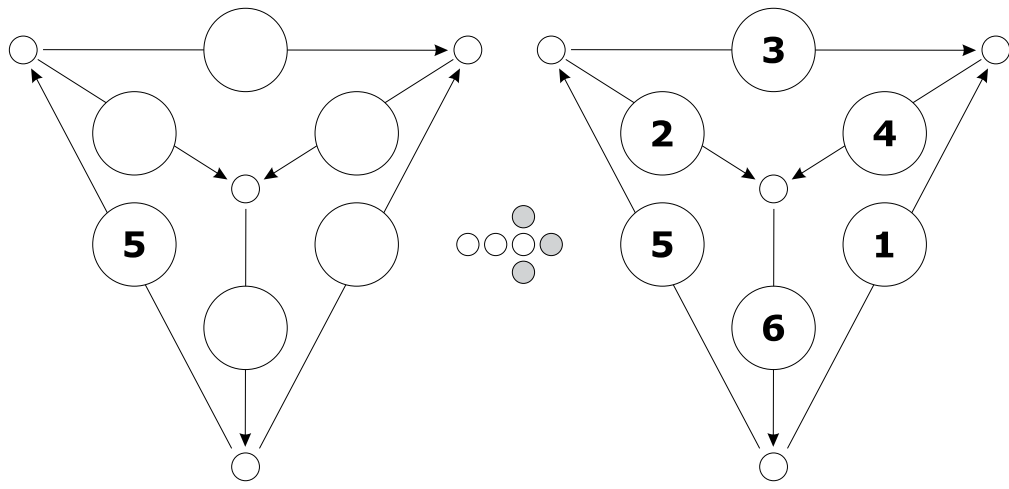
	6	6	6				
	6	7	7	7	7		
9	J	9	8	10	8	10	8
10	K	10	Q	J	9	Q	Q
J	A	A	A	K	J	A	K

Row clues (left to right): ← 6 Q K, ← 6 8 9 10 K, ← 7 8 Q K, ← 7 8 10 J A, ← 7 8 9 10 A, ← 6 7 10 J, ← 6 9 A, ← J Q K

Column clues (top to bottom): ♣♥, ♠♣♦, ♣♦♥, ♠♦, ♣♥, ♠♣♦, ♠♣♦♥, ♠♥

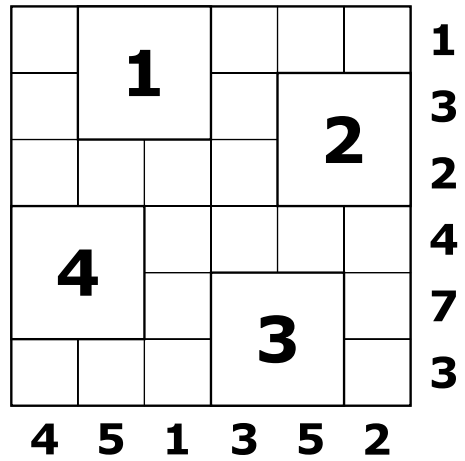
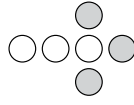
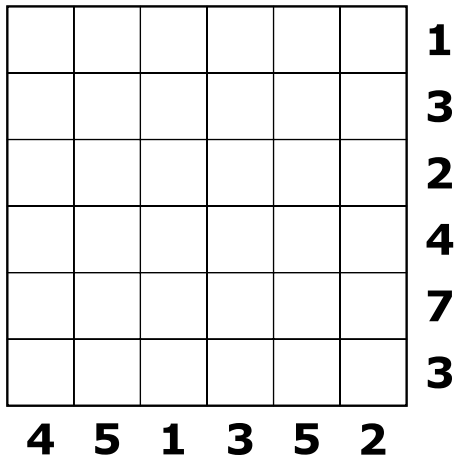
11. Numbers in arrows

Place numbers 1 through 9/13, each of them once, in circles on the arrows. The sum of the numbers on arrows pointing towards a small circle must be equal to the sum of the numbers on arrows leaving that small circle.



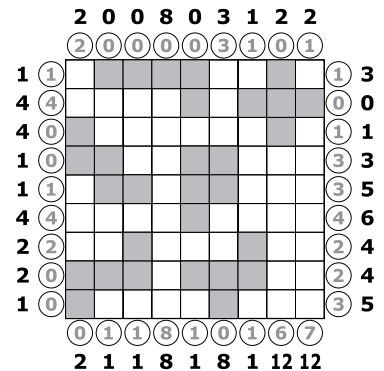
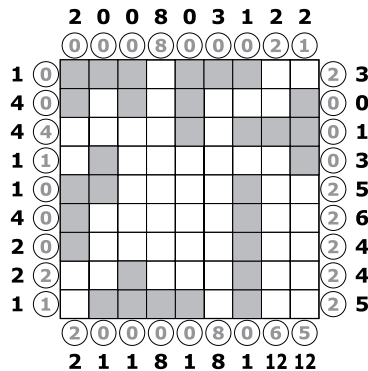
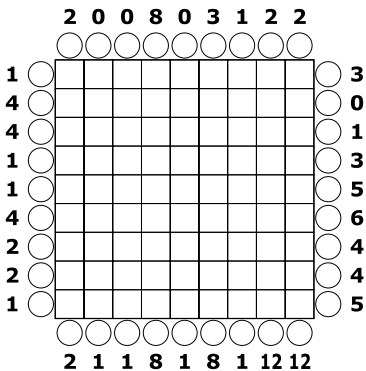
12. Put the squares

Put in the grid nine 2x2 squares, differently numbered from 1 to 9. The squares cannot touch each other even diagonally. The numbers outside the grid indicate the sum of the numbers in squares placed in corresponding rows and columns.



13. Pentamino in half

A complete set of pentaminoes divided into two groups of six elements each was placed into two 9x9 grids with no elements touching or overlapping each other. Pentaminoes can be rotated and mirrored. Each number outside the grid shows the sum of the horizontal or vertical distances from grid border to nearest element for both grids. There are no empty rows and columns. Find the position of the pentaminoes.

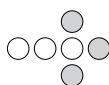


14. Mastermind in line

Place in the cells the digits 0 through 9 (each once). The results of four standard Mastermind comparisons are given: black dots indicate the number of the digits staying at the right place, white dots indicate the number of digits presented but staying at the different positions.

3	9	0	4	1	7	2	5
●	●	●		○	○		

--	--	--	--	--	--	--	--	--	--

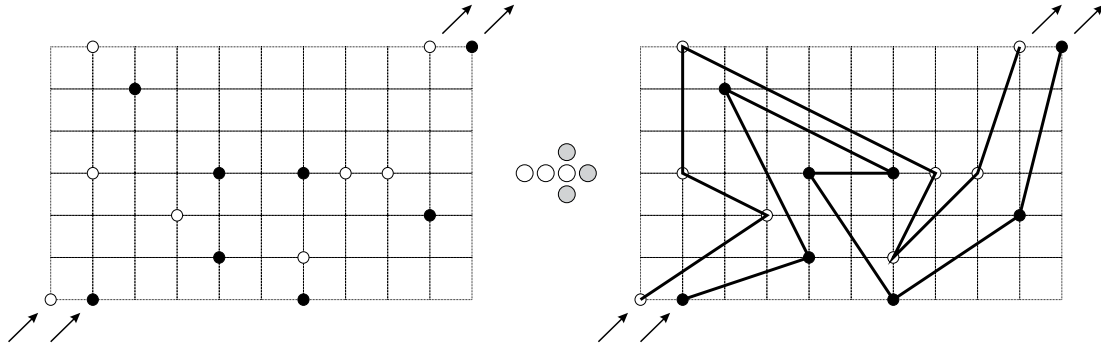


3	9	7	4	6	5	1	0	8	2
---	---	---	---	---	---	---	---	---	---

4	8	6	2	1	0	8	9
●	○			●	●	●	

15. Two ways

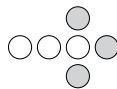
Draw two broken lines, not even touching themselves and each other. Lines must consist only of the straight segments connecting the dots. One line must pass through all the white dots and another must pass through all the black dots. Starting and ending dots of both lines are shown.



16. Number loop

Draw the single closed loop, not touching or intersecting itself, going only horizontally or vertically and passing through the centers of the cells. Numbers occupied by the loop cannot be repeated within single row and column. Sums of those numbers are shown outside the grid.

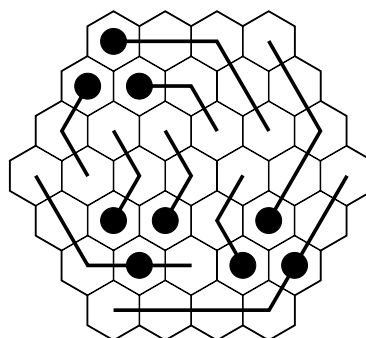
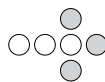
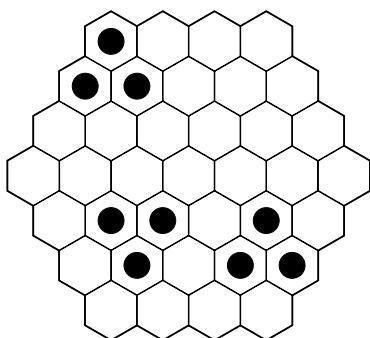
5	4	1	3	5	1	8
4	1	2	5	4	3	12
3	2	5	4	1	2	11
2	4	3	1	5	4	11
4	5	1	2	3	1	15
1	3	4	1	2	3	8
9	15	12	11	13	5	

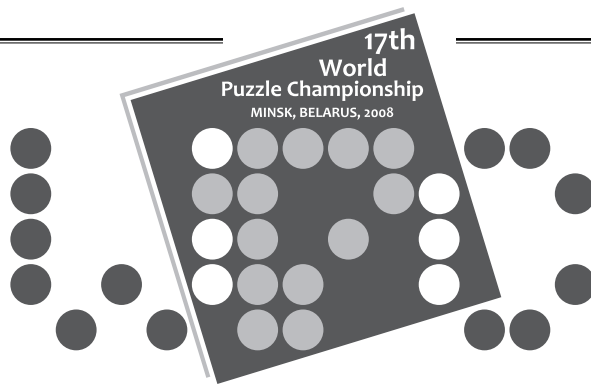


5	4	1	3	5	1	8
4	1	2	5	4	3	12
3	2	5	4	1	2	11
2	4	3	1	5	4	11
4	5	1	2	3	1	15
1	3	4	1	2	3	8
9	15	12	11	13	5	

17. Boomerang

Divide each grid along the gridlines into some "boomerangs" (two-legged figures, legs are of the same size and they create 120 degree angle). Each figure must contain exactly one black circle. Boomerangs cannot overlap the black cells. There must be no free white cells after dividing.





Part IX - team

October, 30TH
12:50 - 13:30

MANIPULATIVE

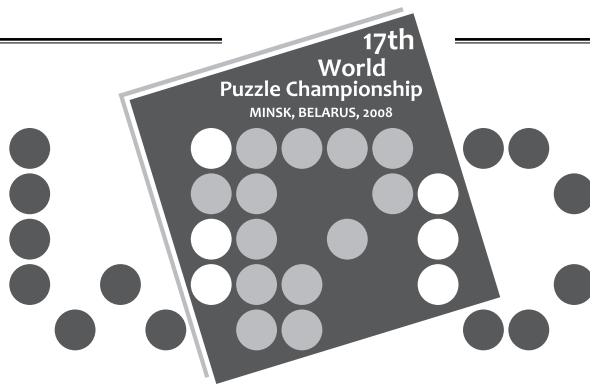
Diamonds

Construct five diamonds from the given fragments.

The scoring depends on the number of constructed diamonds.

3	Diamonds	150
4	Diamonds	300
5	Diamonds	500

ORDER BONUS



Part X - team

October, 30TH

15:00 - 15:30

CHRONO PART

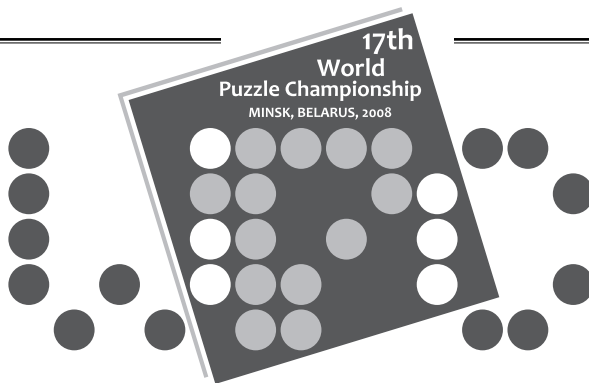
1. *Each team gets a chain of the squares with the images on it.*

Place the given chain in the grid so that all visible images on the squares are different. Squares cannot overlap and they must be fully contained in their cells. You cannot tear or stretch the thread, though it can intersect.

2. *Each team gets a set of the pictures.*

Arrange the pictures in the chronological order.

1	Chain	200
	<i>(with a hint)</i>	75
2	Pictures	8 x 25
	TOTAL	400
	ORDER BONUS	



Part XI - individual

October, 30TH

15:50 - 16:50

CRYPTO PART

In all puzzles of this part digits are replaced with the letters.
 The same letters hide the same digits throughout all of the puzzles.
 Different letters can hide the same digits.

1	Sudoku	24
2	Fences	25
3	Snake	18
4	Four winds	16
5	Clouds	22
6	Skyscrapers	27
Bonus	Discovered letters	17 x 4
	TOTAL	200
	ORDER BONUS	
	TIME BONUS	

1. Sudoku

Fill in the grid with the numbers 1 through 9. Every row, column and 3x3 square must contain each digit once.

2. Fences

Draw a single loop along the grid lines. The loop cannot cross and touch itself. The numbers indicate how many of the cell's borders are part of the loop.

3. Snake

Draw a snake in the grid, 1 cell wide and 45 cells long. Its head and tail are given. The numbers outside the grid indicate the number of the squares occupied by the snake in the correspondent row or column. The body of the snake cannot touch itself, not even diagonally.

4. Four winds

One or more horizontal or vertical lines are drawn from each numbered square. Lines cannot cross other numbered squares. Each number indicates how many squares are connected by its lines; the numbered squares themselves are not counted. No lines overlap or intersect each other, and each empty square is covered by exactly one line.

5. Clouds

Place some clouds in the grid. All clouds are rectangular or square and at least two squares wide and two squares long. The clouds cannot touch, not even diagonally. The numbers outside the grid indicate how many cells are covered by the clouds in the correspondent row or column.

6. Skyscrapers

The grid symbolises a group of skyscrapers. Each row and column contains skyscrapers of different heights (1~7). The numbers outside the grid indicate how many skyscrapers are visible from that direction. Every cell of the grid should be filled.

E
E
D
A
A
G

B F A G B H

Clouds

G
A
B
F
I
E

E H G E B A

Snake

B B C H
A E I H
B C E G

Skyscrapers

A	B		C
	E	G	H

Sudoku

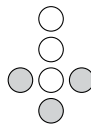
B	A	G	
	D		B
C		C	
A	A		G

Fences

E		G	
			A
	B		

Four winds

A	B	C	D	E	F	G	H	I



E
E
D
A
A
G

B F A G B H

Clouds

G
A
B
F
I
E

E H G E B A

Snake

B B C H
A 2 3 4 1 B
E 1 2 3 4 I
I 4 1 2 3 H
H 3 4 1 2 B

Skyscrapers

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

Sudoku

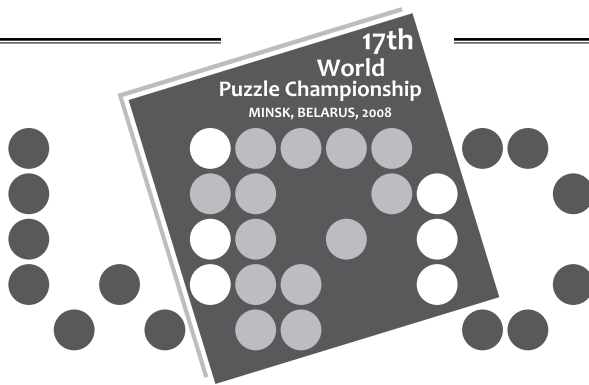
B	A	G	
	D		B
C		C	
A	A		G

Fences

E		G	
			A

Four winds

A	B	C	D	E	F	G	H	I
3	2	1	0	4	5	3	2	1



Part XII - individual

October, 30TH

CARDS

17:00 - 18:00

The scoring for this part depends on the number of the solved puzzles.

1	Square	30
2	Squares	60
3	Squares	90
4	Squares	125
5	Squares	160
6	Squares	200

ORDER BONUS

Form a 3x3 square of the cards so that all given card triplets could be met in it, horizontally or vertically. Cards of the same suit cannot touch each other, not even diagonally. Sums of the values in all rows and columns should be equal (numerals count as they are, Kings, Queens and Jacks count as zero, Ace counts as 1, Joker counts as 10).

Six squares of this part must use every card of the full 54-cards deck exactly once.

