

SOLUTIONS



8TH 24 HOURS PUZZLE CHAMPIONSHIP

17-18 NOVEMBER, 2007

HOTEL BENTA

BUDAPEST

PUZZLES BY

BOGLÁR MAJOR

SUDOKU, AMORPHOUS SUDOKU, DIAGONAL MAGIC SQUARE, SUM MAGIC SQUARE, PRODUCT MAGIC SQUARE, CONSECUTIVE SUDOKU, SNAKE, FINNISH SNAKE, DOTTED SNAKE, SNAKE PIT, MINESWEEPER SNAKE, JAPANESE SNAKE, EASY AS ABC, EASY AS ABC – SECOND LETTERS, EASY AS ABC – WITH SECTORS, EASY AS ABC - WITH DIAGONALS, EASY AS ABC – IN HEXAGON, EASY AS ABC – SECOND LETTERS IN HEXAGON, GRAPES, PYRAMID, CZECH PYRAMID, 3D PYRAMID, ORDER IN THE COURT, NUMBER TABLES, SIMPLE TENT CAMP, TENT CAMP, SIMPLE TENT CAMP – WITH SECTORS, HALF DOMINOES, DICE, DOMINO FIGURE, DOMINO, DOMINO IN HEXAGON, PEARLS, LIGHTHOUSES, ANTI-MAGIC SQUARE, ANTI-MAGIC SQUARE – PRODUCTS, ANTI-MAGIC HEXAGON, ANTI-MAGIC HEXAGON – PRODUCTS, MATHEMATICAL SQUARE, MATHEMATICAL MAGIC SQUARE, SIMPLE LOOP-FINDER, OLD LABYRINTH, LOOP IN THE LABYRINTH, EVERY SECOND TURN, HEX LOOP, FROM 0 TO 9, SKYSCRAPERS – WITH DIAGONALS, SKYSCRAPERS – WITH SUMS, SKYSCRAPERS – WITH PRODUCTS, SKYSCRAPERS – WITH EMPTY PLOTS, SKYSCRAPERS – IN HEXAGON, HONEY 7, MINESWEEPER, MINESWEEPER PENTOMINO, DIVISION BY ABCDE, JAPANESE PENTOMINO, CIRCULAR REASONING, RECTANGLES, STAR BATTLE, ROWS AND COLUMNS, CLOUDS, ALL FOURS, AREA OCCUPATION, FOUR WINDS, DOORS, CAVE EXPEDITION, FENCES IN THE CAVE, FENCES AND PENTOMINO, FENCES, FENCES IN HEXAGON, ABC-CONNECTION, ABC-CONNECTION IN HEXAGON, SUMS, BRIDGES, ANGLERS, EQUAL OR NOT EQUAL, BATTLESHIPS, BATTLESHIPS IN HEXAGON, POPULATION COUNT, DARTS, SHADING, ARROWS, SPOKES, NEIGHBOURING NUMBERS, JAPANESE BATTLESHIPS, VALUED CAPSULES, CORAL SEARCH, MAGNETS, ISLANDS, T-SHAPES, INVASION, GARDENS, THERMOMETERS, PUZZLE, MAGIC SNAIL, SUDOKU WITH RELATIONAL SIGNS, SUM TO DO, MAGIC HEXAGON, PAINT BY PENTOMINO, PAINT IT IN TWO COLOURS

10 POINTS EACH



1. SUDOKU (1-6)

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

4. SUM MAGIC SQUARE (1-6)

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

2. AMORPHOUS SUDOKU (1-6)

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

5. PRODUCT MAGIC SQUARE (1-6)

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

3. DIAGONAL MAGIC SQUARE (1-6)

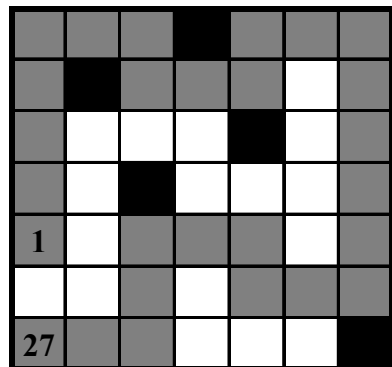
5	2	6	3	1	4
1	6	4	5	3	2
3	4	1	2	5	6
2	3	5	4	6	1
4	1	3	6	2	5
6	5	2	1	4	3

6. CONSECUTIVE SUDOKU (1-6)

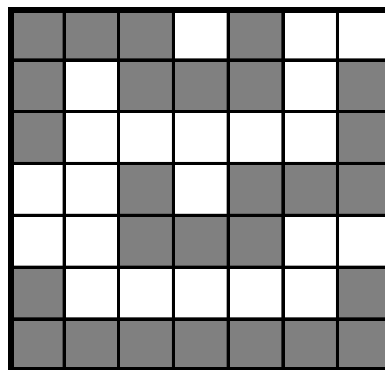
3	4	2	1	6	5
1	5	6	3	2	4
2	1	4	6	5	3
6	3	5	2	4	1
5	2	1	4	3	6
4	6	3	5	1	2



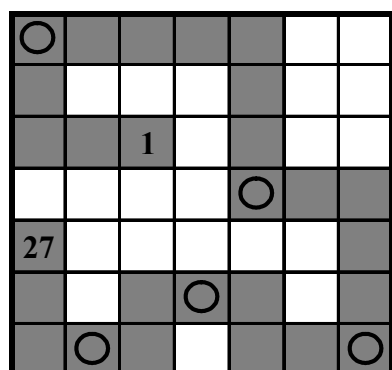
7. SNAKE (27 LONG)



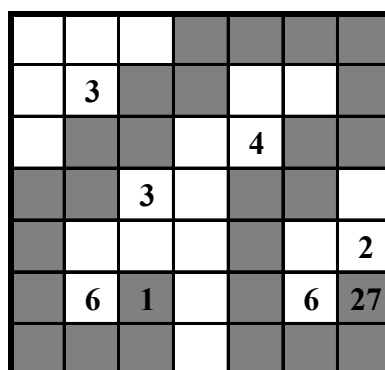
10. SNAKE PIT (3 SNAKES, 9 LONG EACH)



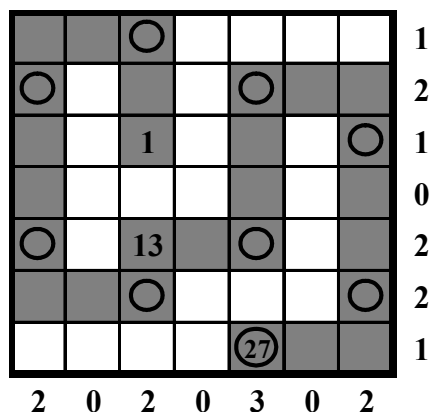
8. FINNISH SNAKE (27 LONG)



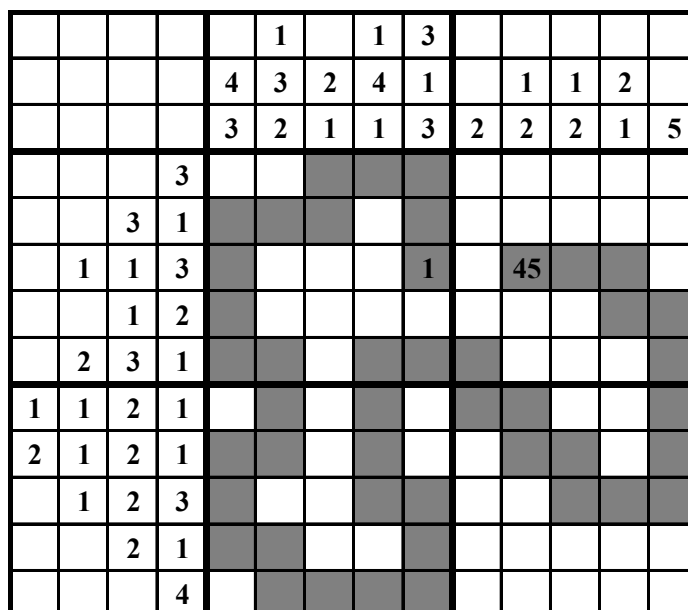
11. MINESWEEPER SNAKE (27 LONG)



9. DOTTED SNAKE (27 LONG)



12. JAPANESE SNAKE





13. EASY AS ABC (B, E, A, R)

	A		A		
	A	R	E		B
	E	B	R	A	
A		A	B	E	R
	B	E		R	A
R	R		A	B	E
	E		E		

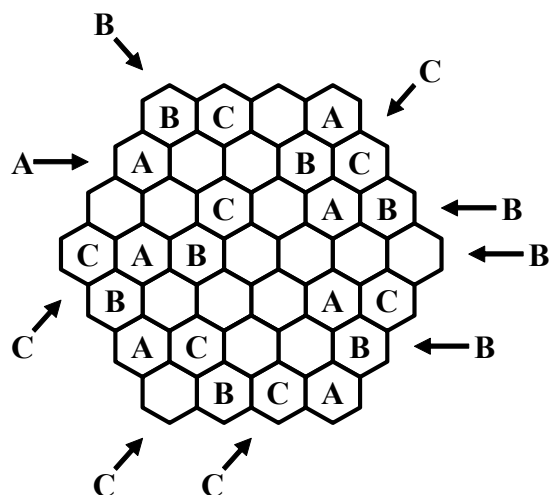
16. EASY AS ABC – DIAGONALLY (B, E, A, R)

		R		A		B	
E	E		A		R	B	
	B		R	A	E		E
R		R	B		A	E	
	A	E		R	B		B
A		A	E	B		R	
	R	B		E		A	A
	R		E	B			

14. EASY AS ABC – SECOND LETTERS (B, E, A, R)

	E	E			
	A	R		B	E
B		E	B	R	A
	R		E	A	B
	B	A	R	E	
B	E	B	A		R
	B	A	A		

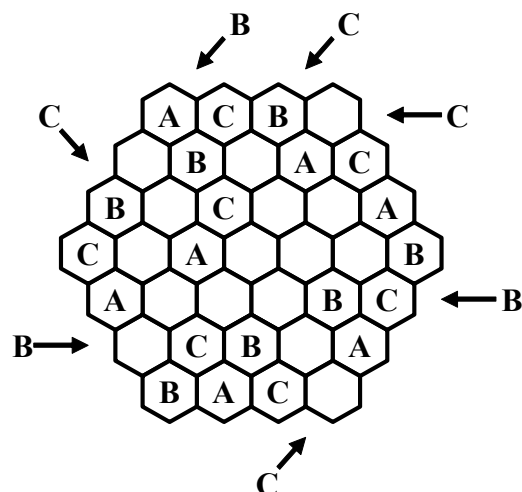
17. EASY AS ABC – IN HEXAGON (A, B, C)



15. EASY AS ABC – WITH SECTORS (B, E, A, R)

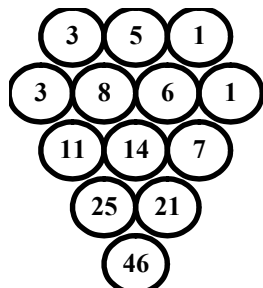
	B	B			
E	R		B	A	A
	A	B	E	R	
A	B	R		E	
B	E	A	R		R
R		E	A	B	
	E	E			

18. EASY AS ABC – SECOND LETTERS IN HEXAGON (A, B, C)

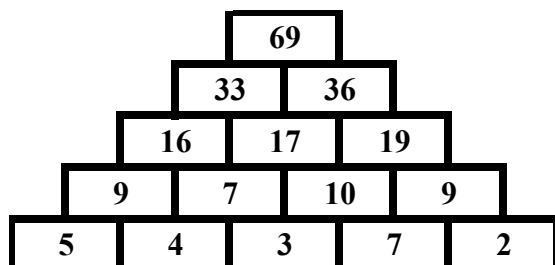




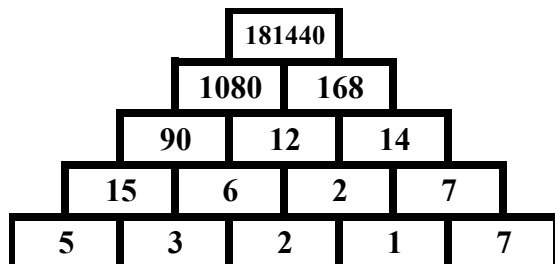
19. GRAPES



20. PYRAMID



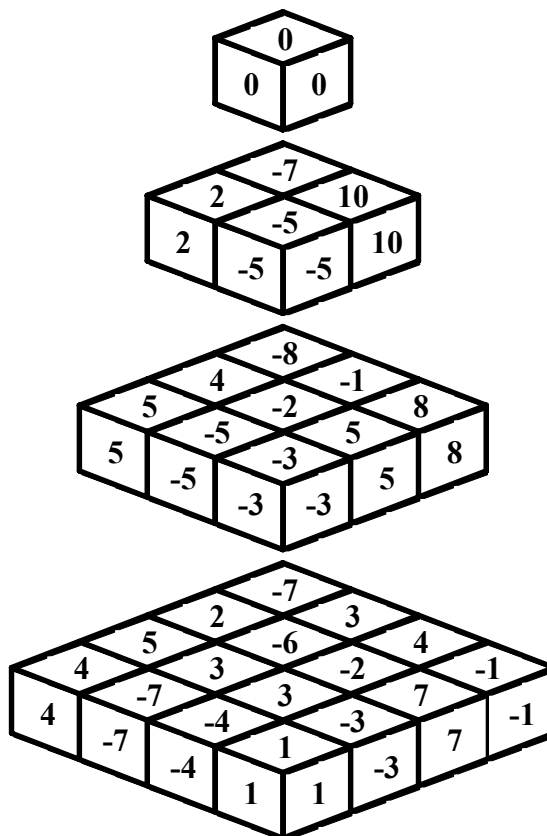
21. CZECH PYRAMID



23. ORDER IN THE COURT

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

22. 3D PYRAMID



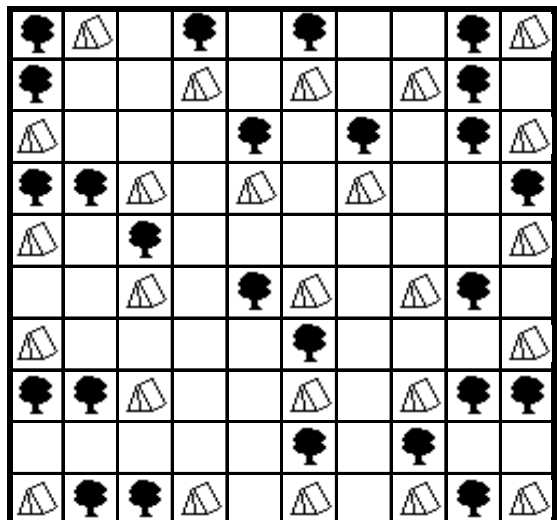
24. NUMBER TABLES

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

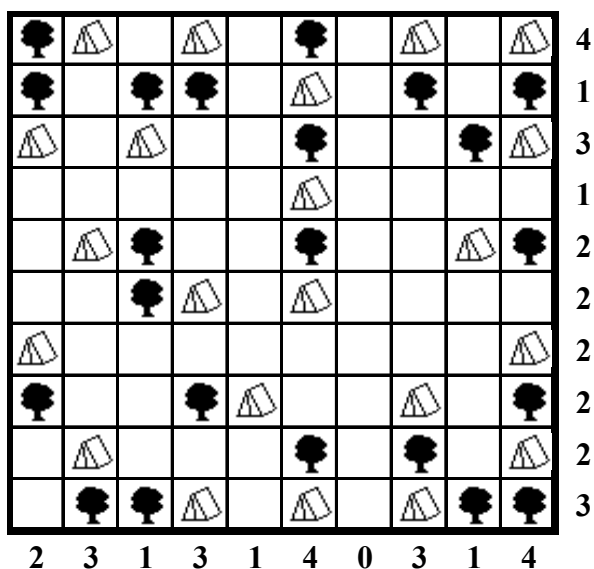
8	2	4	7	5	3
7	1	8	5	6	1
5	6	2	3	2	9



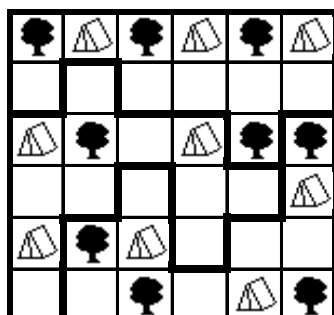
25. SIMPLE TENT CAMP



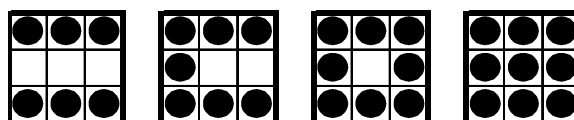
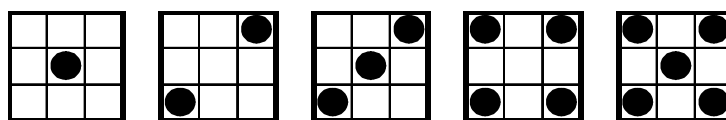
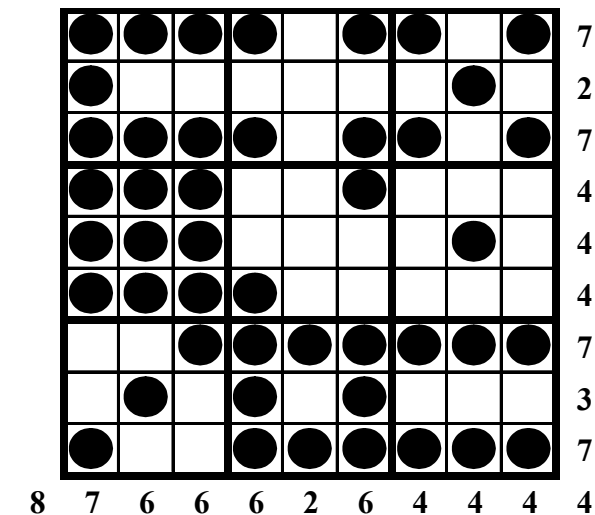
26. TENT CAMP



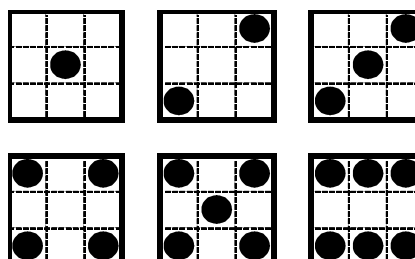
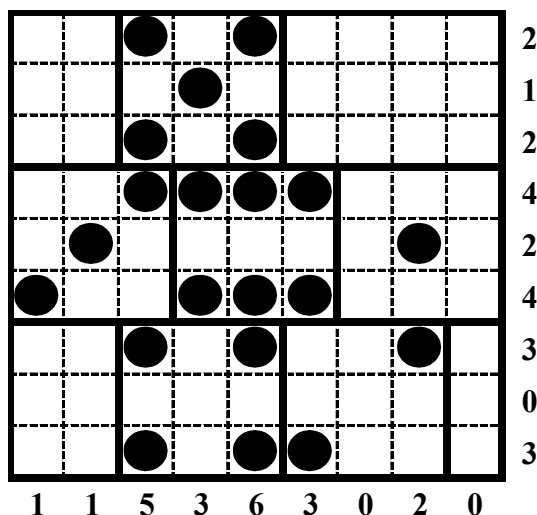
27. SIMPLE TENT CAMP – WITH SECTORS (3 TENTS PER SECTOR)



28. HALF DOMINOES

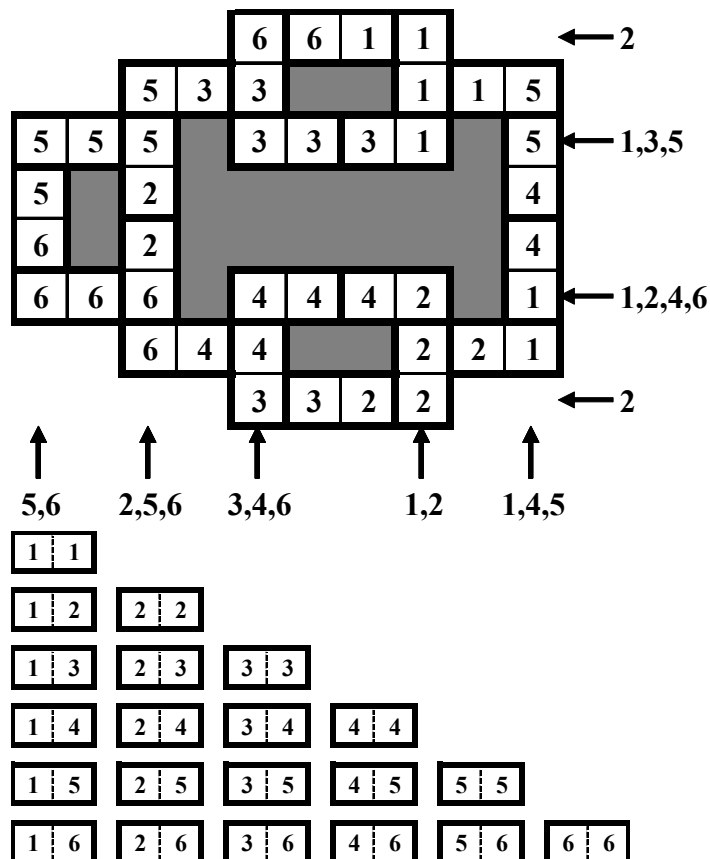


29. DICE



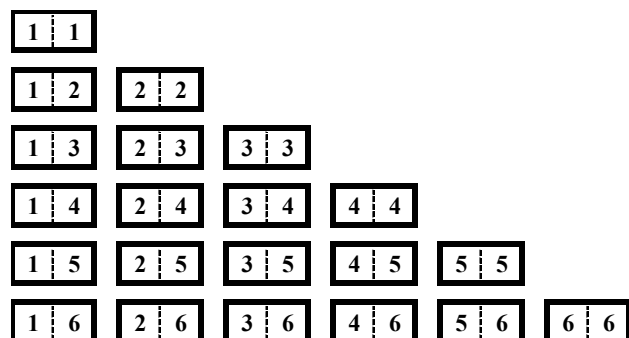


30. DOMINO FIGURE

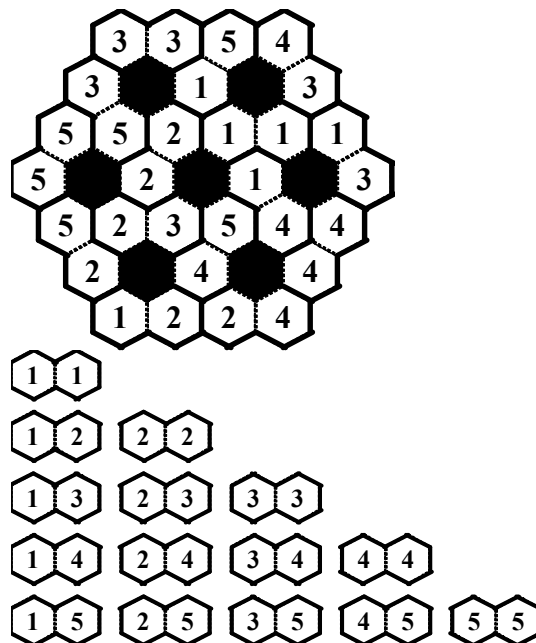


31. DOMINO

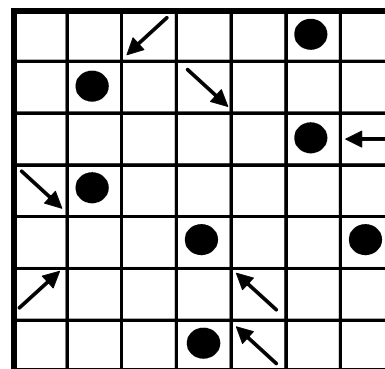
1	5	3	6	5	3	2
5	4	2	5	4	5	6
3	2	2	1	4	2	6
5	5	4	1	4	2	4
1	2	6	1	1	6	4
3	3	3	6	6	1	3



32. DOMINO IN HEXAGON



33. PEARLS (7 PEARLS)



34. LIGHTHOUSES (9 BOATS)

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



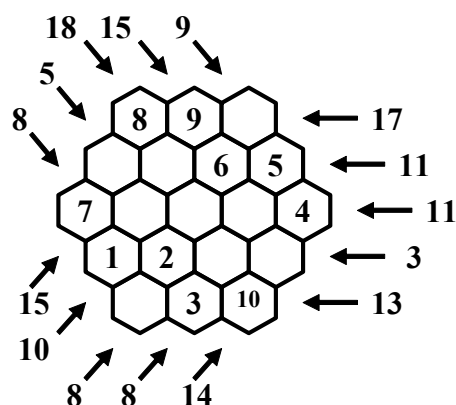
35. ANTI-MAGIC SQUARE (1-10)

5				2	3
10		8			7
	7		9		18
	1	6			16
			3	4	7
15	8	14	12	6	9

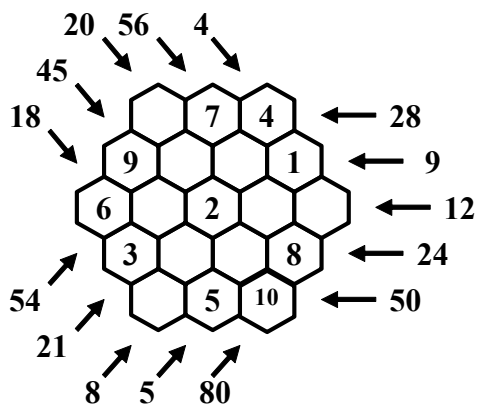
36. ANTI-MAGIC SQUARE – PRODUCTS (1-10)

		8		3	6
7		1			24
6			5		7
	2		4		30
	10			9	8
42	20	8	20	27	90

37. ANTI-MAGIC HEXAGON (1-10)



38. ANTI-MAGIC HEXAGON – PRODUCTS (1-10)



39. MATHEMATICAL SQUARE

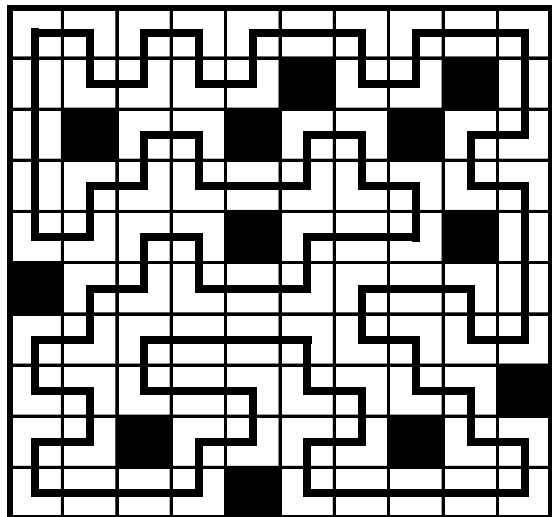
6	+	1	-	4	=	3
+		+		+		
5	x	9	:	3	=	15
-		:		:		
8	-	2	x	7	=	42
=		=		=		
3		5		1		

40. MATHEMATICAL MAGIC SQUARE

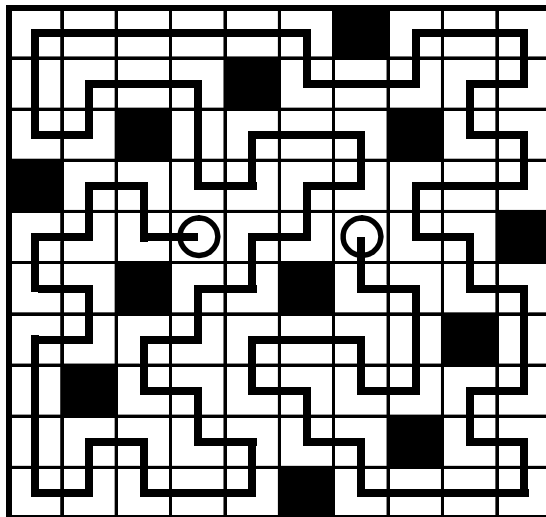
A	B	C	D	E	
3	1	2	4	5	A1+B1+C1=6
4	2	5	3	1	A4+A5=3
5	3	1	2	4	B2+B3=5
1	4	3	5	2	B3+D4+E3=12
2	5	4	1	3	C4+D4=8
					D5+E5=4
					E2+E3=5



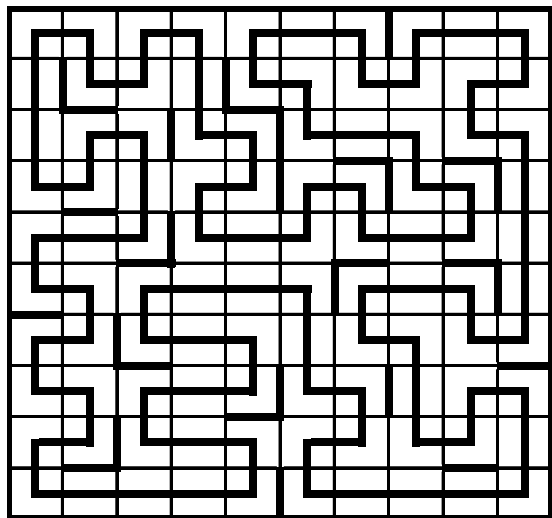
41. SIMPLE LOOPFINDER



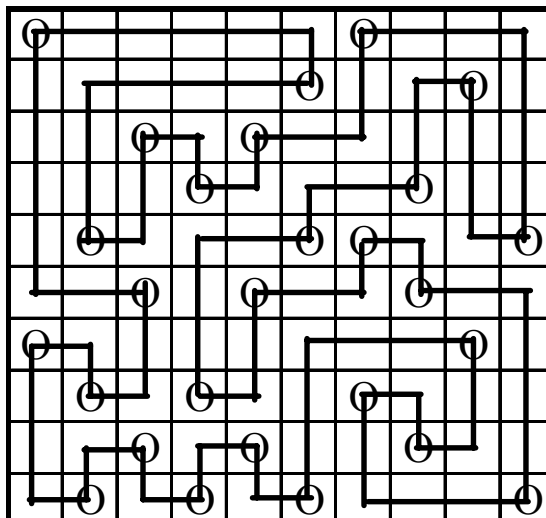
42. OLD LABYRINTH



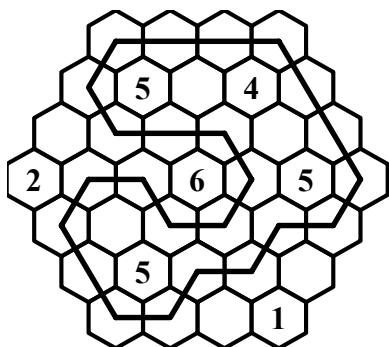
43. LOOP IN THE LABYRINTH



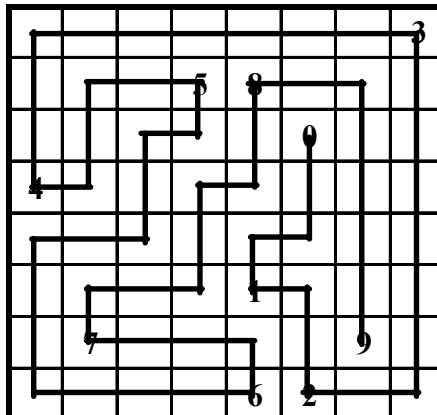
44. EVERY SECOND TURN



45. HEX LOOP



46. FROM 0 TO 9





47. SKYSCRAPERS – WITH DIAGONALS
 (1-5)

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

48. SKYSCRAPERS – WITH SUMS
 (1-5)

	12		11		9	
	1	5	2	3	4	
14	2	3	4	5	1	6
	4	1	3	2	5	
12	3	4	5	1	2	7
	5	2	1	4	3	
	5		6		8	

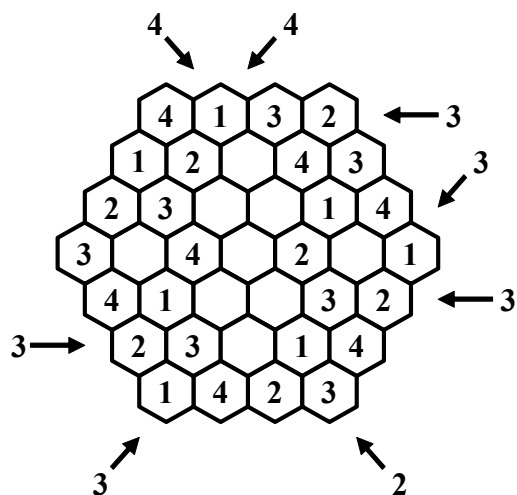
49. SKYSCRAPERS – WITH PRODUCTS
 (1-5)

	20	10		5	60	
	4	2	1	5	3	
15	3	1	5	2	4	20
	2	5	3	4	1	
5	5	3	4	1	2	40
	1	4	2	3	5	
	5		40		5	

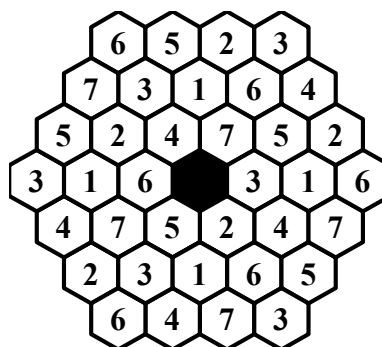
50. SKYSCRAPERS – WITH EMPTY PLOTS
 (1-4)

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

51. SKYSCRAPERS – IN HEXAGON
 (1-4)



52. HONEY 7



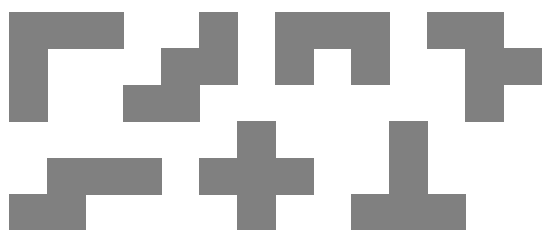


53. MINESWEEPER (12 MINES)

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

54. MINESWEEPER PENTOMINO

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

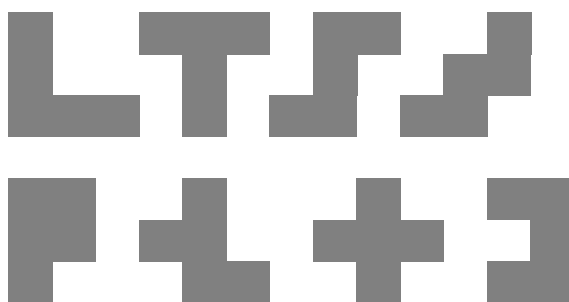


55. DIVISION BY ABCDE

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

56. JAPANESE PENTOMINO

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

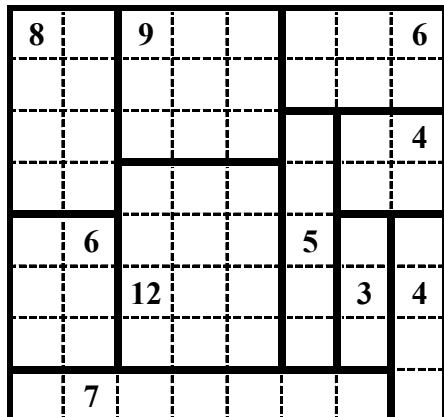


57. CIRCULAR REASONING

○				○	○	○	○
○	○					○	
○	○	○	○		○	○	
○	○			○	○		
						○	
○		○					
○	○	○	○		○	○	○

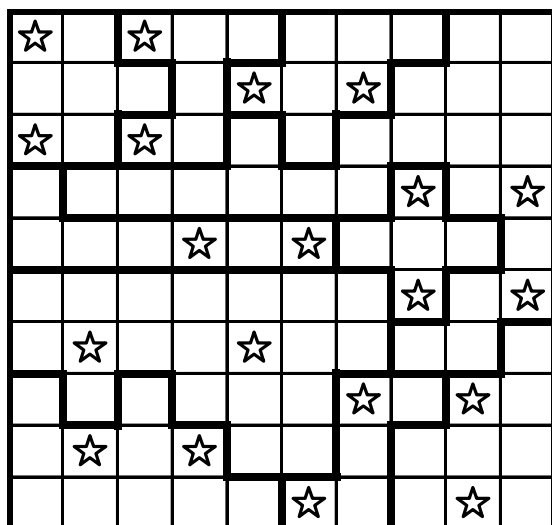


58. RECTANGLES

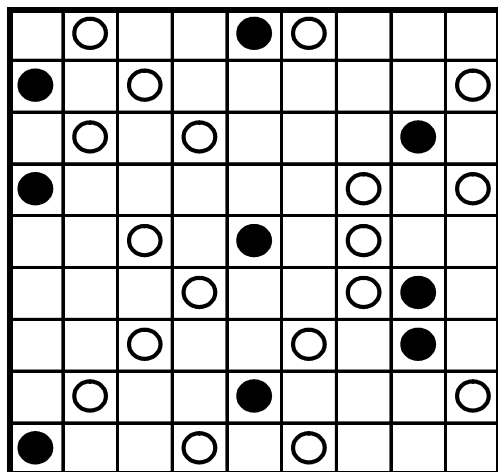


59. STAR BATTLE

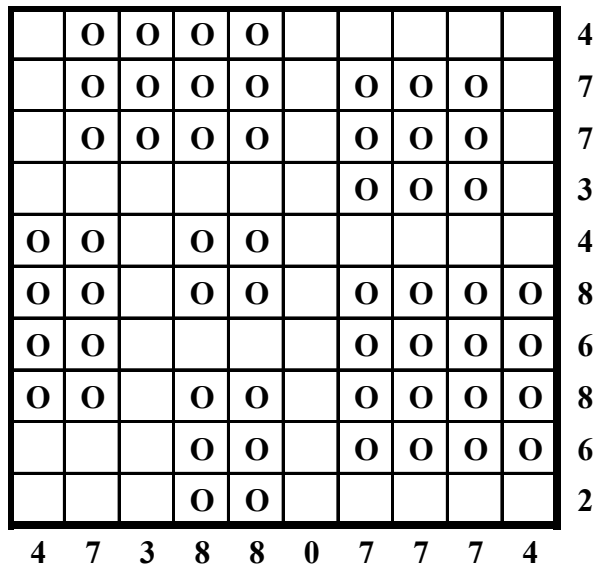
(2 STARS/ROW/COLUMN/SECTION)



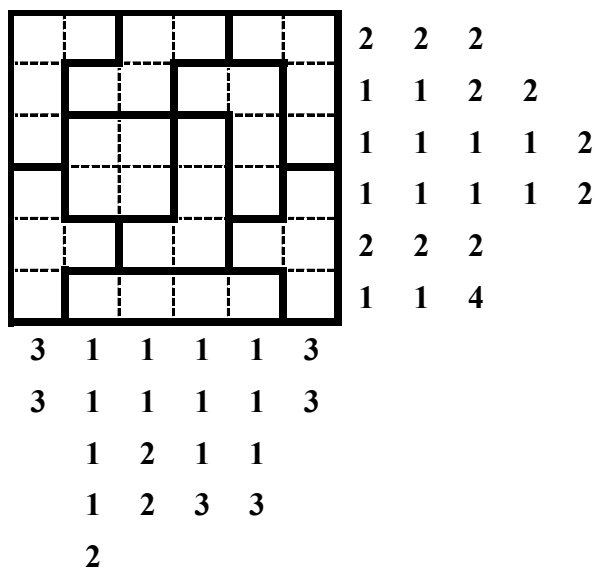
60. ROWS AND COLUMNS



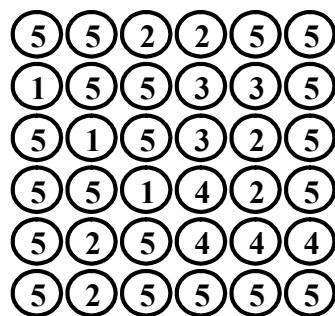
61. CLOUDS



62. ALL FOURS

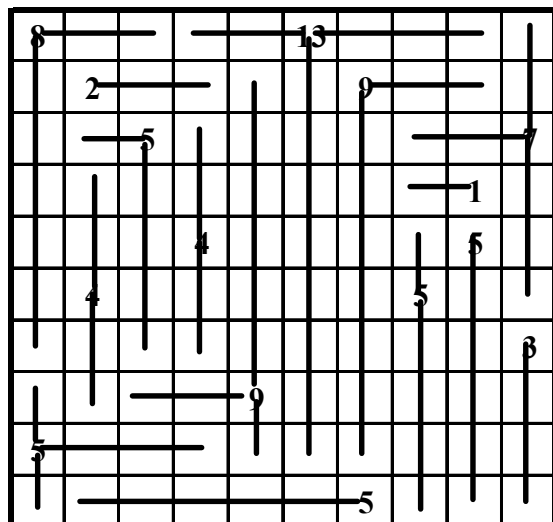


63. AREA OCCUPATION





64. FOUR WINDS



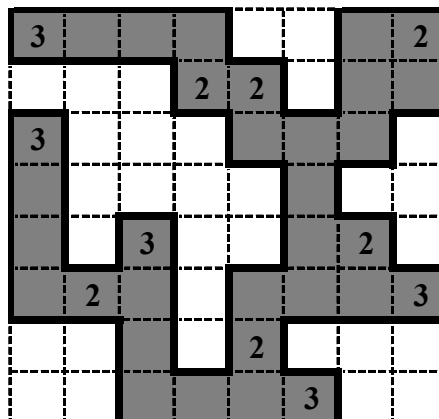
65. DOORS

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

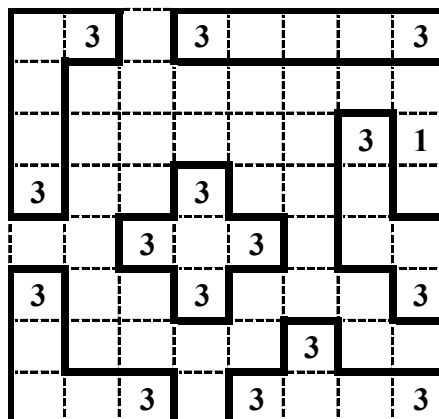
66. CAVE EXPEDITION

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

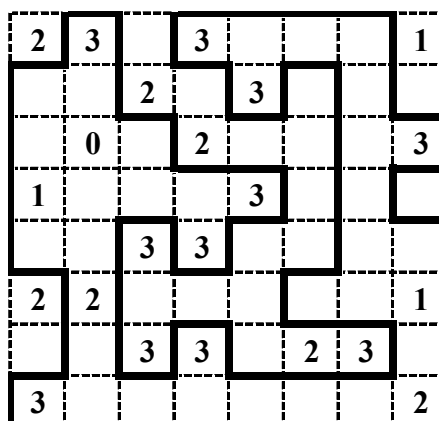
67. FENCES IN THE CAVE



68. FENCES AND PENTOMINO

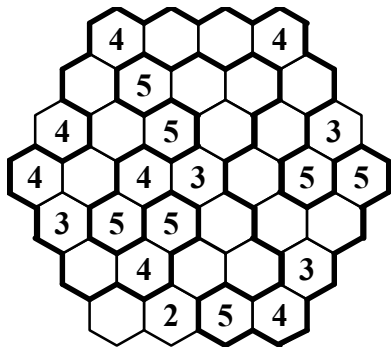


69. FENCES

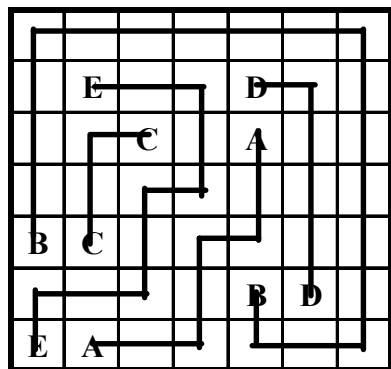




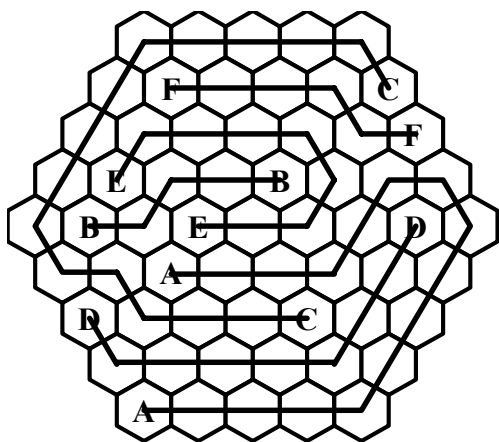
70. FENCES IN HEXAGON



71. ABC-CONNECTION



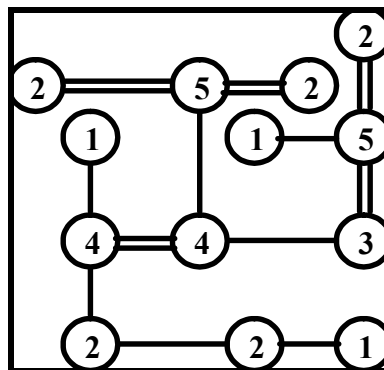
72. ABC-CONNECTION IN HEXAGON



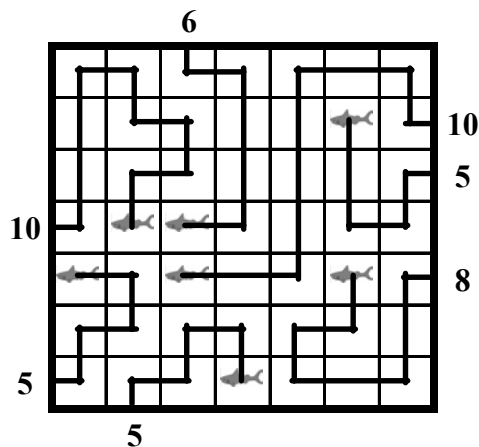
73. SUMS (1-7)

5	1	6	4	7	2	3
6	4	5	2	7	3	1
6	1	7	3	4	5	2
17	6	18	9	18	10	6

74. BRIDGES



75. ANGLERS

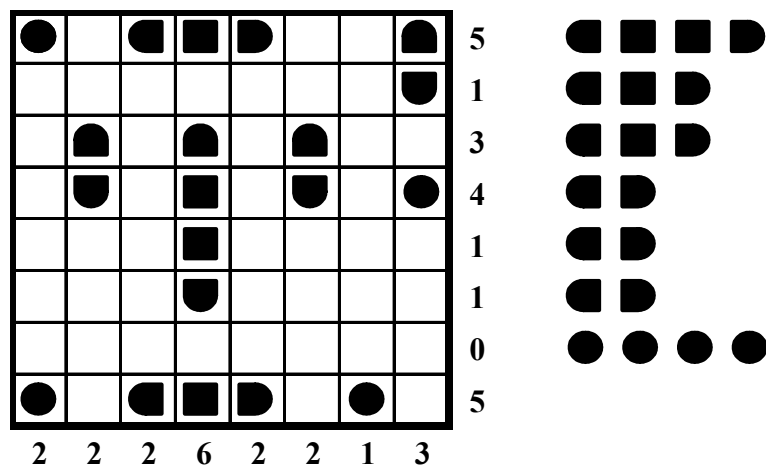


76. EQUAL OR NOT EQUAL (1-7)

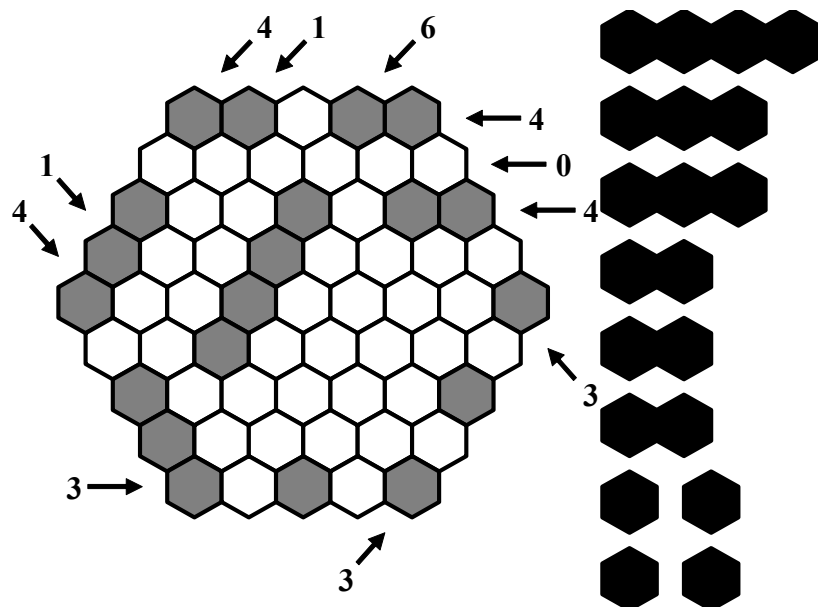
6	<	7	=	7	>	4	<	5	<	6
∨		∨		∨		∨		∨		∧
5	<	6	>	4	>	3	=	3	<	7
∨		∥		∧		∨		∨		∨
4	<	6	>	5	>	1	<	2	<	3
∨		∨		∨		∥		∨		∧
3	=	3	<	4	>	1	=	1	<	4
∨		∥		∧		∧		∧		∧
2	<	3	<	5	<	7	>	6	>	5
∨		∧		∥		∨		∧		∧
1	<	4	<	5	<	6	<	7	>	6



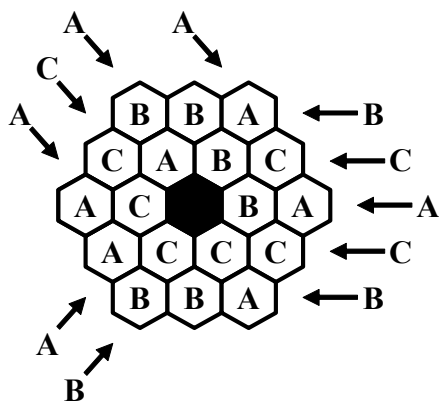
77. BATTLESHIPS



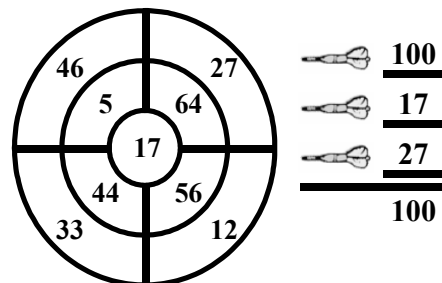
78. BATTLESHIPS IN HEXAGON



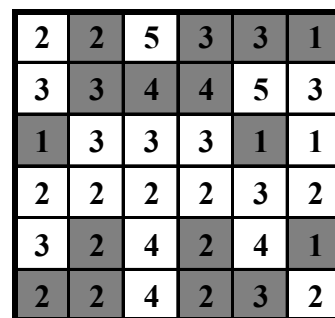
79. POPULATION COUNT



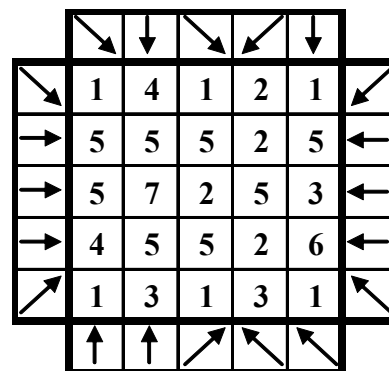
80. DARTS



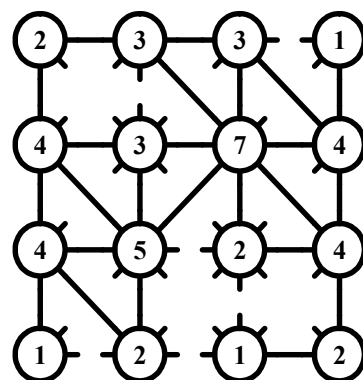
81. SHADING



82. ARROWS

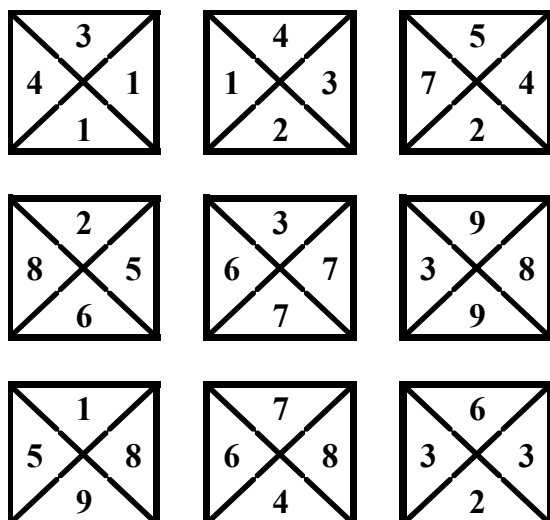
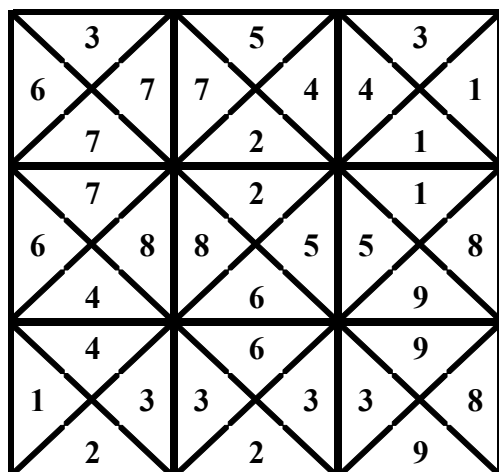


83. SPOKES





84. NEIGHBOURING NUMBERS

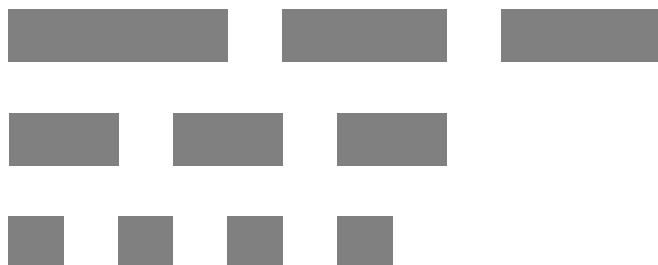


86. VALUED CAPSULES

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

85. JAPANESE BATTLESHIPS

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



87. CORAL SEARCH

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

88. MAGNETS

+	-	+			+	-	+	4	2		
		+	-			+	-	3	3		
		-			-			0	2		
+					-	+		3	2		
-			-	+			+	-	2	3	
+				-	+			3	2		
-	+	-	+	-			+			3	3
+	-	+	-				-			2	3
4	2	2	2	3	1	3	3	+			
2	3	3	3	2	1	4	2		-		

					6				
		8							
					4				
		5				5			
					12				
			10						6
				5		5			

The puzzle consists of a 10x10 grid. Numbers are placed in the corners of the grid:

- Top-left: 5
- Top-right: 2, 6, 2
- Bottom-left: 4, 12, 4, 3, 1, 5, 3, 10, 2, 6
- Bottom-right: 7, 3, 7, 1, 3, 5, 6, 1, 3, 7, 7, 5

A legend on the right shows three types of shapes and their point values:

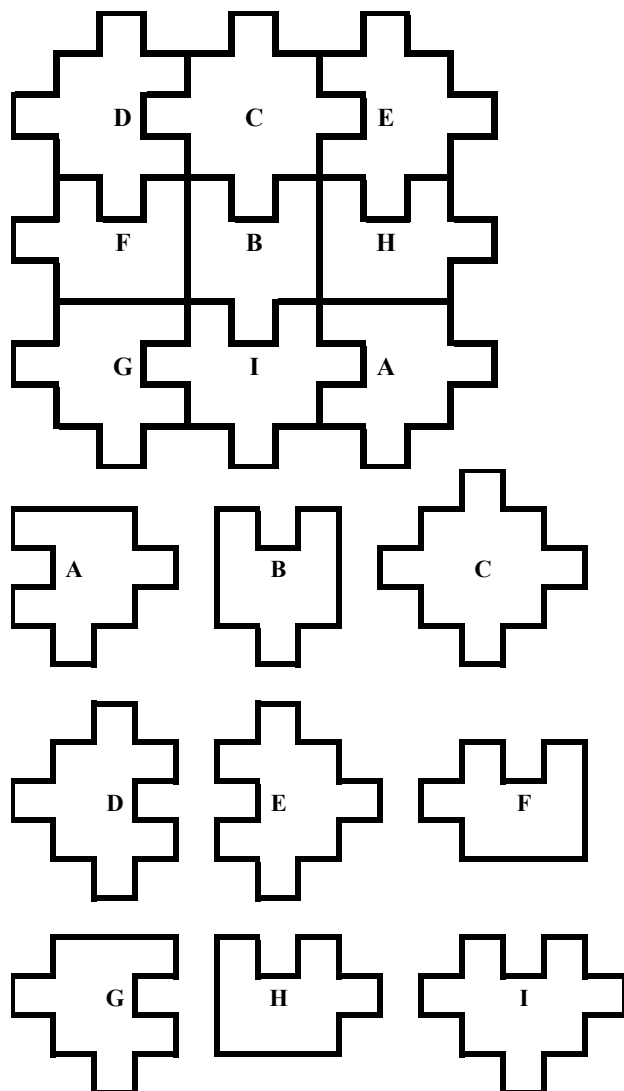
- 3pont (3 points): A triangle.
- 2pont (2 points): A rectangle with a triangle on top.
- 1pont (1 point): A rectangle.

		6		5			
		5		3			
			3				
					5		4

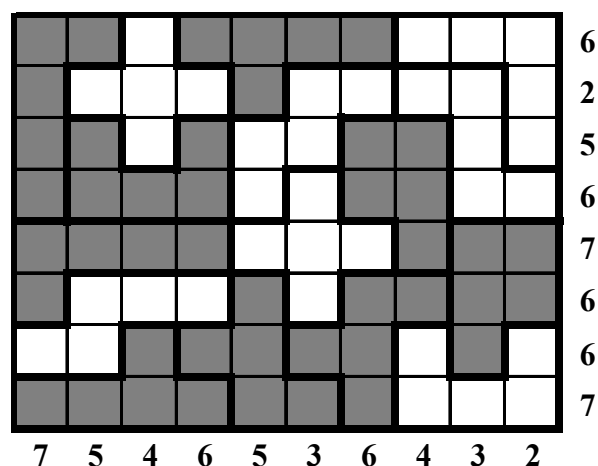
Figure 1 shows a 5x5 grid world environment. The grid contains various obstacles (black and white rectangles) and goals (black and white circles). The top row is labeled with numbers 3, 5, 4, 4, 1, 3, 5. The left column is labeled with numbers 5, 4, 4, 2, 3, 2, 5.



94. PUZZLE



99. PAINT BY PENTOMINO



95. MAGIC SNAIL (1-3)

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

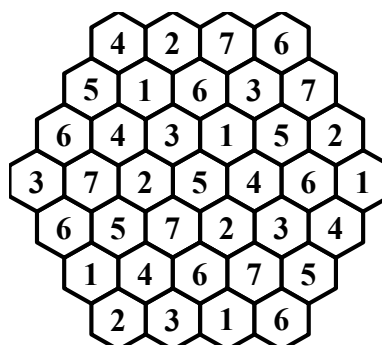
96. SUDOKU WITH RELATIONAL SIGNS

3 < 4 > 1	6 > 2 < 5
2 < 5 < 6	3 > 1 < 4
1 < 6 > 4	5 > 3 > 2
5 > 3 > 2	4 < 6 > 1
6 > 2 < 5	1 < 4 > 3
4 > 1 < 3	2 < 5 < 6

97. SUM TO DO (1-9)

				21
2	1	6	1	10
3	4	9	9	25
7	8	3	1	19
3	1	9	8	21
15	14	27	19	17

98. MAGIC HEXAGON





100. PAINT IT IN TWO COLOURS

