

NAME:

POINTS:



## 6<sup>TH</sup> 24 HOURS PUZZLE CHAMPIONSHIP

14-15 OCTOBER, 2005

HOTEL EGER&PARK

EGER

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PUZZLES BY  
**BERNHARD SECKINGER / ULRICH VOIGT**

WITH HELP OF  
**ROLAND VOIGT / IMMANUEL HALUPCZOK**

<b>24 Hours Path</b>	<b>40 points</b>
<b>Magnets</b>	<b>30 points</b>
<b>Laser</b>	<b>60 points (10+20+30 points)</b>
<b>Snake</b>	<b>100 points (40+60 points)</b>
<b>Pentomino Sums</b>	<b>60 points</b>
<b>Rectangular Dissection</b>	<b>70 points</b>
<b>Tetris Dissection</b>	<b>80 points</b>
<b>Number Maze</b>	<b>70 points (20+50 points)</b>
<b>Chess Placement</b>	<b>40 points</b>
<b>Blackout Math</b>	<b>50 points (5+5+5+10+10+15 points*)</b>
<b>Arrows</b>	<b>100 points (40+60 points)</b>
<b>Magic Sums</b>	<b>70 points</b>
<b>Overlapping Skyscrapers</b>	<b>100 points</b>
<b>Colored Square</b>	<b>50 points</b>
<b>Hexagonal Path</b>	<b>80 points</b>

\* Points are given according to the number of solved puzzles.



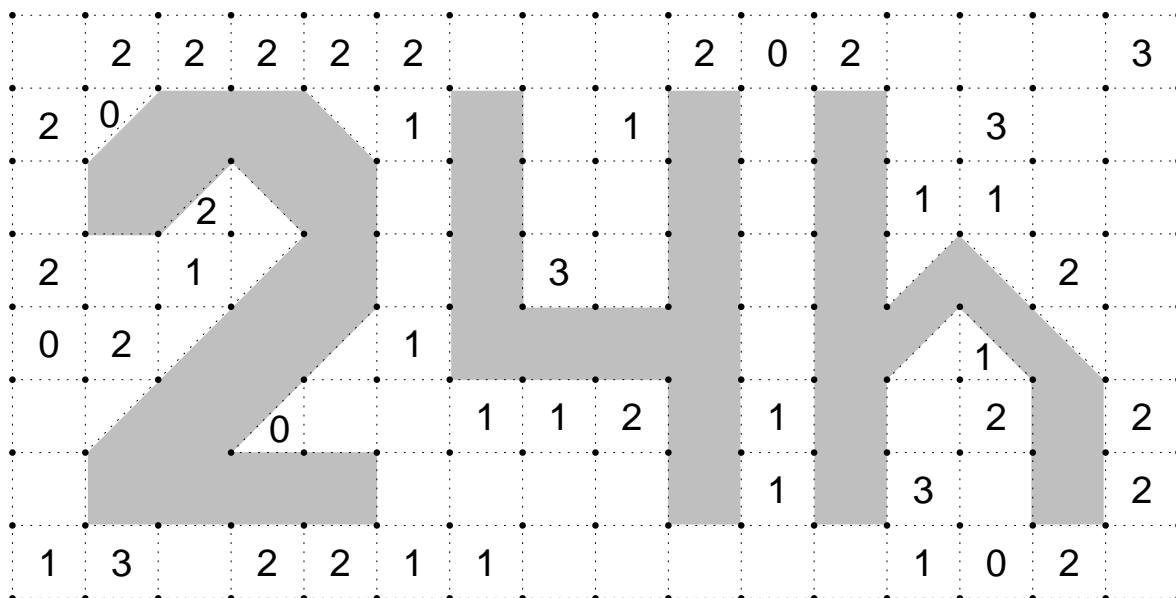
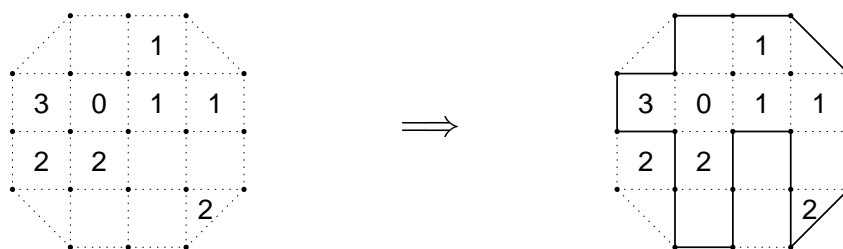
# 1

40 points

## 24 HOURS PATH

Draw a single continuous loop by connecting neighboring dots along the dotted lines. The numbers indicate how many edges of its field are used for the loop. The loop may not touch or cross itself, and it doesn't need to touch all of the dots.

**Example:**







# 3

10+20+30 points

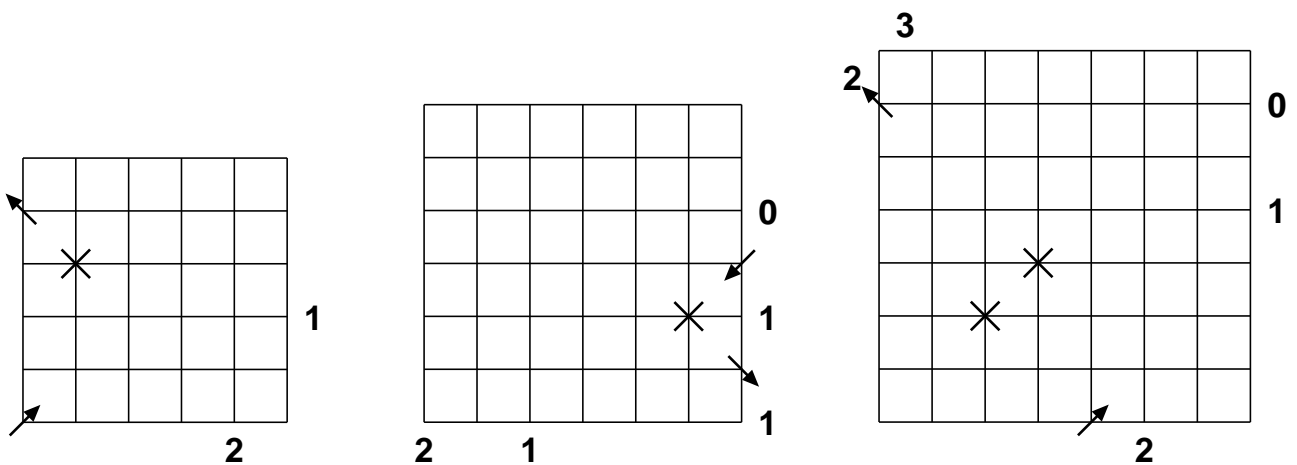
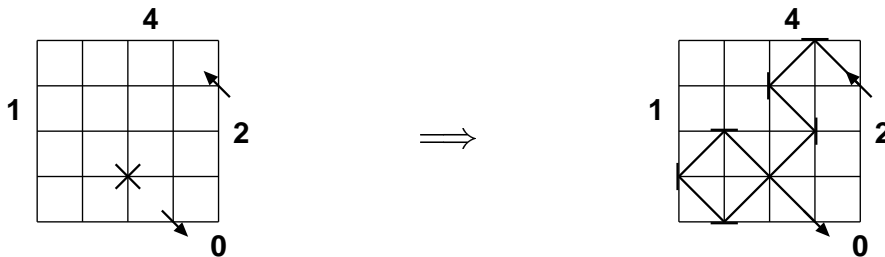
## LASER

The arrow pointing into the grid tells you where the laser beam enters. Draw horizontal and vertical mirrors on the intersections of the grid, such that the laser leaves the grid as indicated by the other arrow.

The numbers on the left and top tell you how often the laser beam passes through a cell of that row/column. The numbers on the right and bottom tell you how many mirrors you have to put on the corresponding line.

The laser beam crosses itself only at the marked places. It meets each mirror exactly once.

### Example:







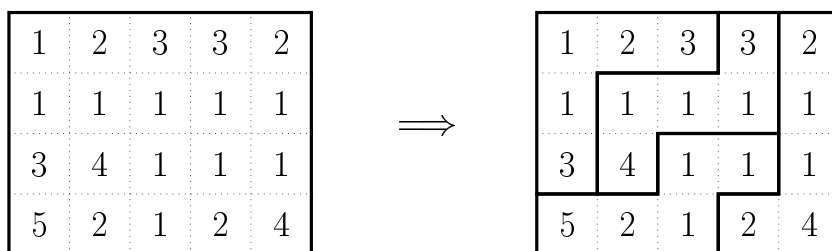
# 5

60 points

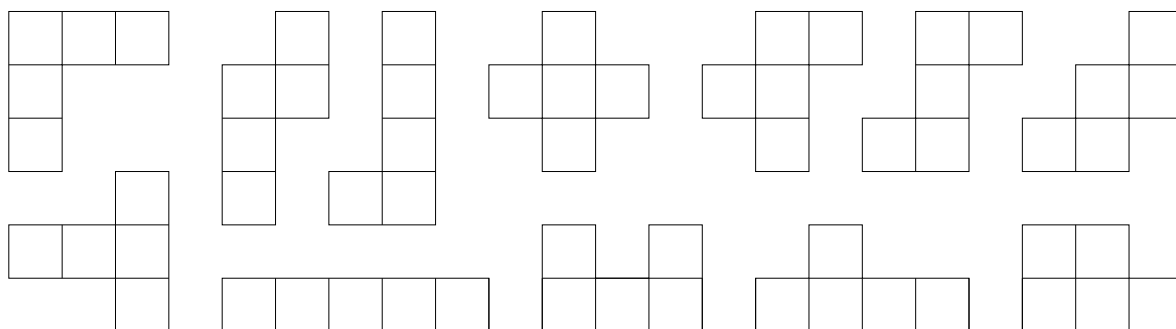
## PENTOMINO SUMS

Divide the grid into areas of five squares. The sum of the digits within each area must be equal to 10. The twelve possible pentomino shapes are given below; each of them must be used exactly once, but they may be rotated and reflected.

**Example (with only 4 of the 12 penominos):**



**The 12 pentominos:**



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



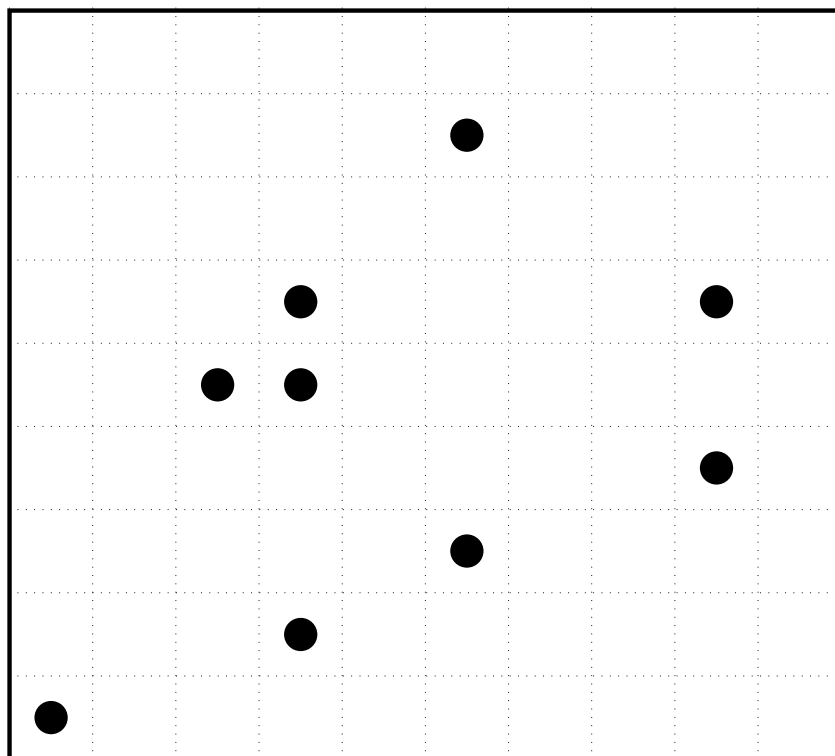
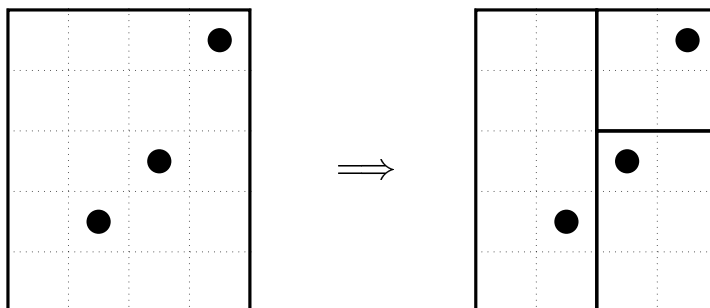
# 6

70 points

## RECTANGULAR DISSECTION

Divide the grid into nine rectangles, each of them containing exactly one black circle. Any two rectangles must be of different size or shape, even when rotated (2x6 is considered the same rectangle as 6x2, but 3x4 is not). No rectangle may have a side length of 1.

**Example (with three rectangles):**





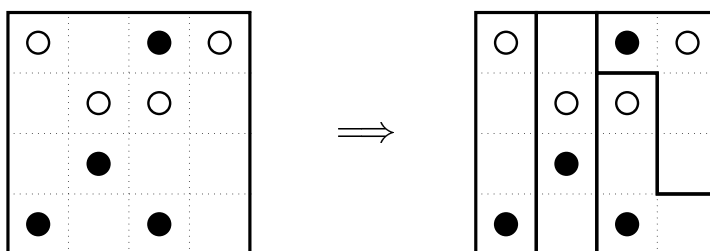
# 7

80 points

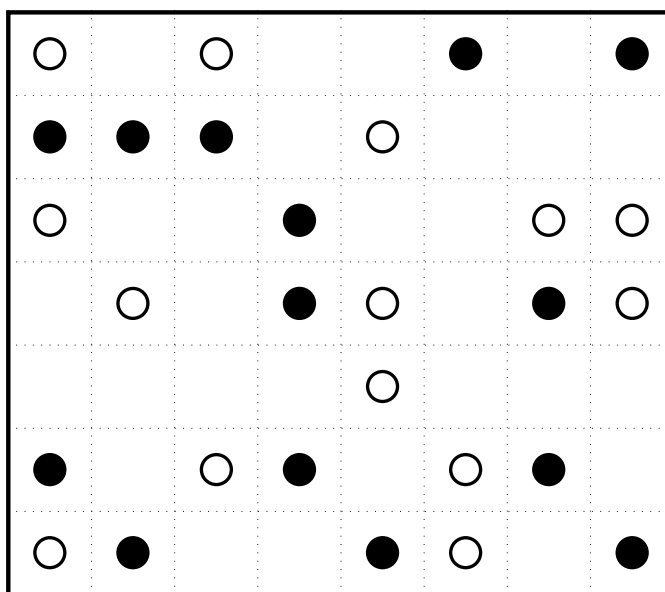
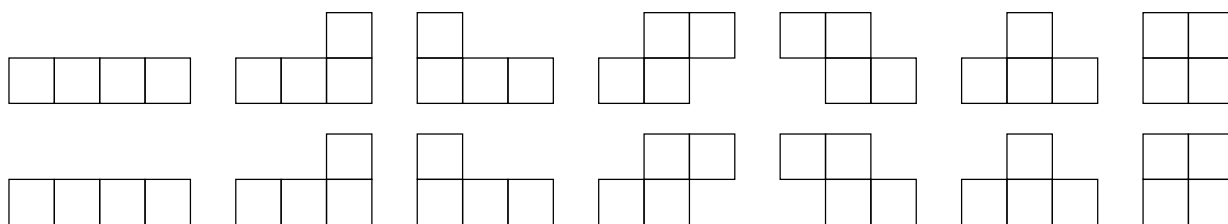
## TETRIS DISSECTION

Divide the grid into tetris pieces, each of them containing exactly one black and one white circle. There are seven possible shapes, each of them must be used exactly twice; they may be rotated but not reflected.

**Example (with only two shapes, both used twice):**



**The 14 shapes:**







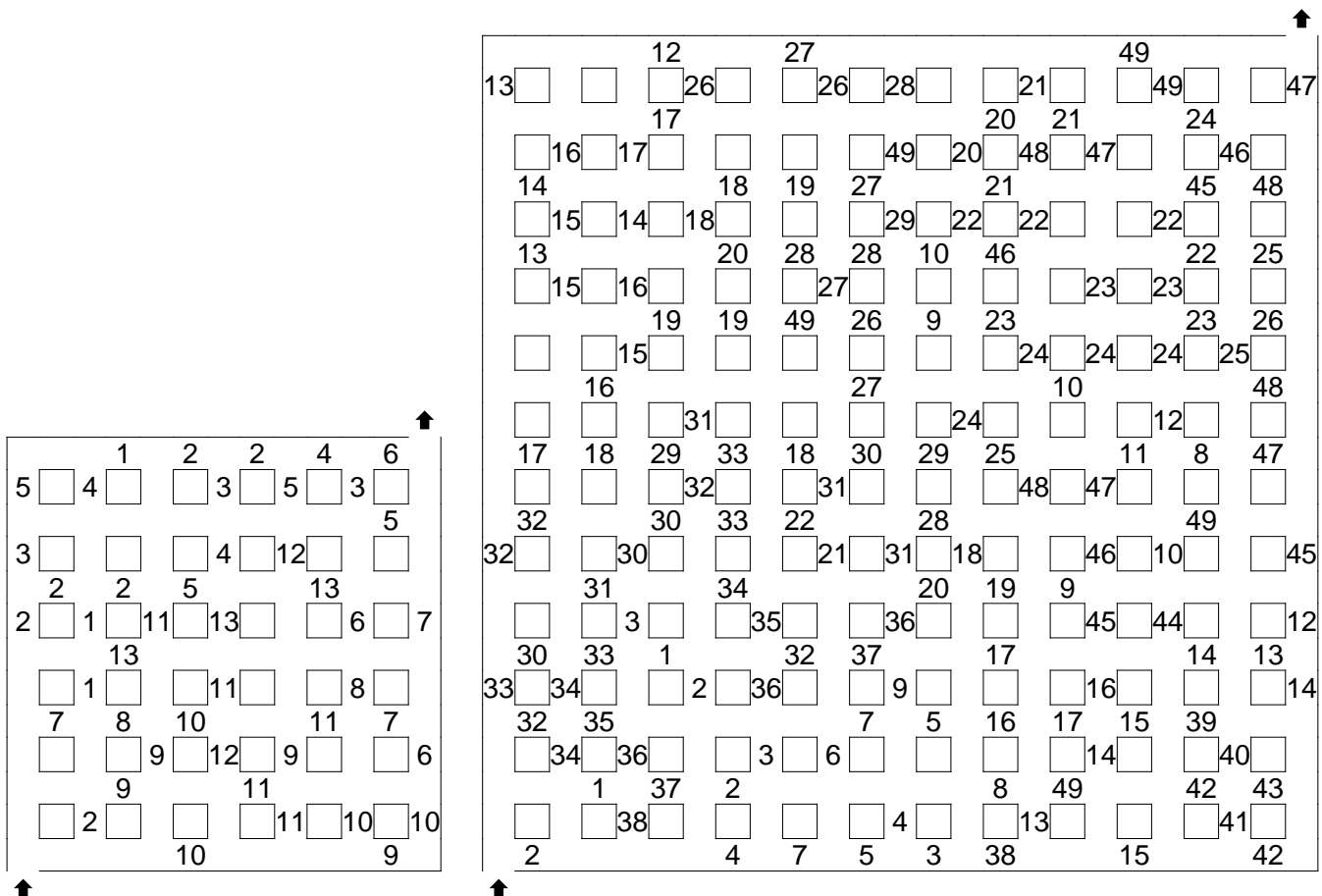
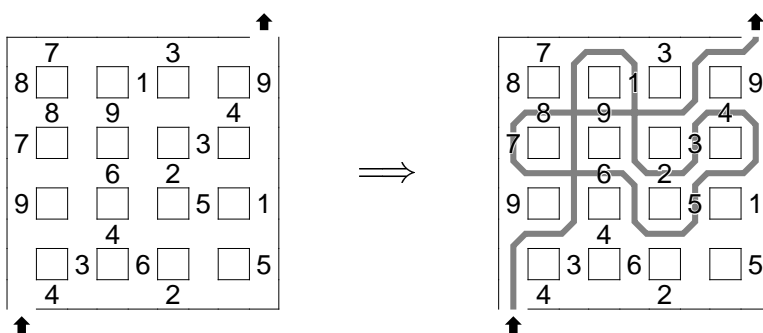
# 8

20+50 points

## NUMBER MAZE

Find a path through the maze that runs through the numbers from 1 to 13 (first puzzle) or 1 to 49 (second puzzle) in ascending order, each number exactly once. The path may cross or touch itself, but it may not use a line segment more than once.

**Example (with numbers from 1 to 9):**





# 9

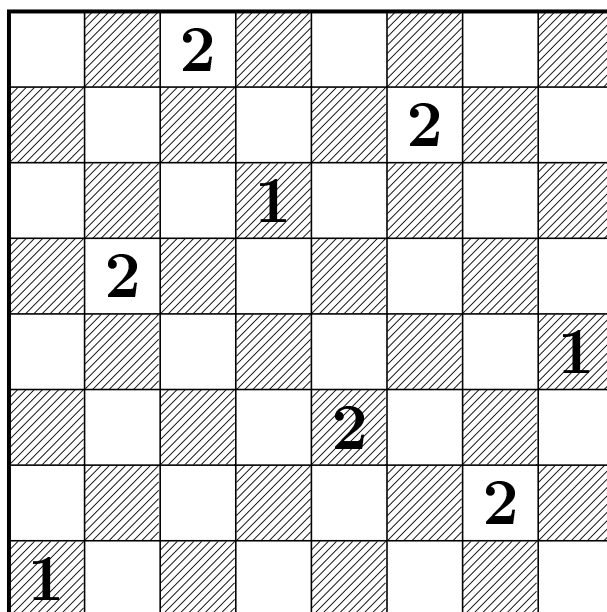
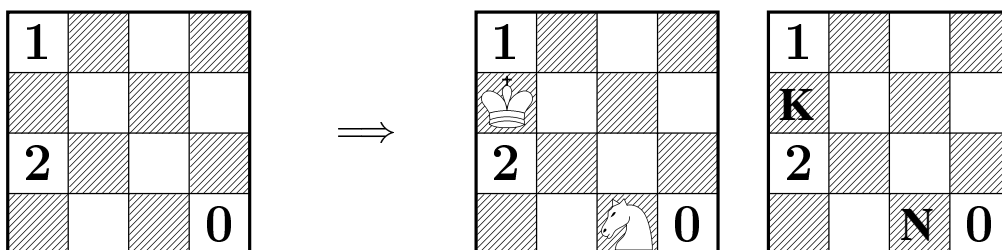
40 points

## CHESS PLACEMENT

Place five chess pieces on the board, namely one king, one queen, one rook, one bishop and one knight each. The numbers indicate how many pieces can move to this square from their position. No piece may attack another, and no piece may be placed on a numbered square.

Write the letters K (king), Q (queen), R (rook), B (bishop) and N (knight) into the grid.

**Example (with only king and knight):**





# 10

50 points (details see below)

## BLACKOUT MATH

In each row, paint exactly two cells black to form a correct equation. Standard algebra rules are followed, so multiplication and division must be calculated before addition and subtraction. Also, operations between brackets go first.

**Example:**

1	9	+	8	4	=	2	*	7
---	---	---	---	---	---	---	---	---

⇒

1	9	+	8		=	2		7
---	---	---	---	--	---	---	--	---

**Please note:** Points are given according to the number of equations that you solve. See table on the right.

Solved equations	Points
1	5
2	10
3	15
4	25
5	35
6	50

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

4	6	/	2	+	3	*	1	2	=	8	9	-	6	*	5
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

(	3	+	5	)	*	(	8	-	5	)	/	2	=	1	9
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

1	3	+	6	*	8	-	2	9	=	5	*	7	+	4	0
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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

(	7	8	/	2	6	+	5	)	*	3	=	2	6	-	7
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---



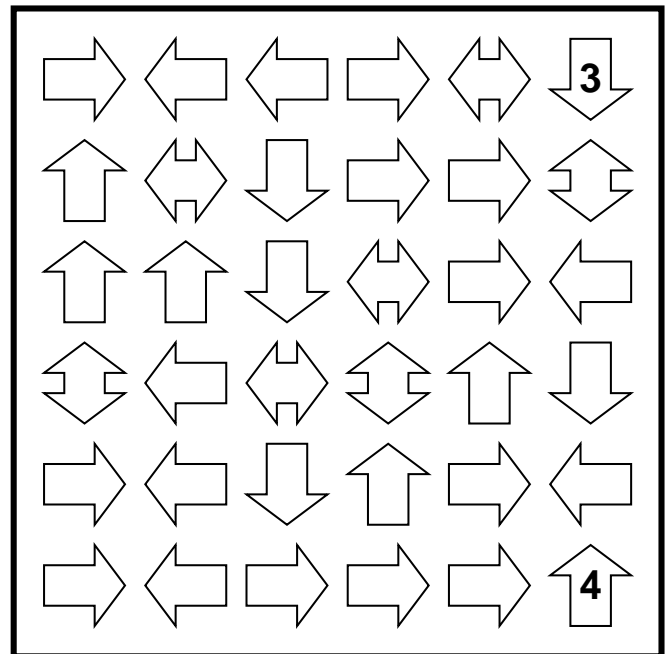
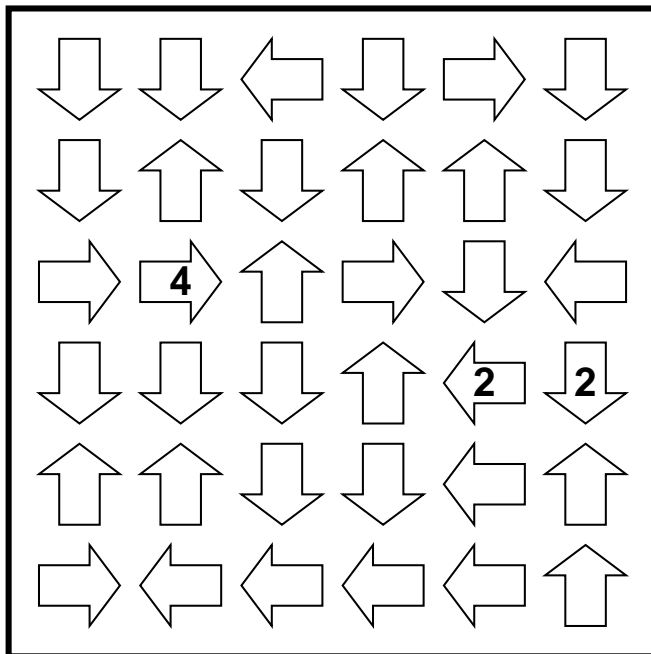
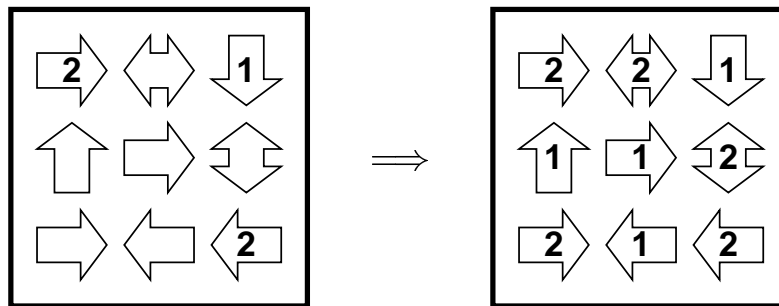
# 11

40+60 points

## ARROWS

Write a digit into each arrow such that each digit indicates the number of different digits the arrow is pointing at. For arrows pointing in more than one direction, the digits from all these directions together are considered.

**Example:**





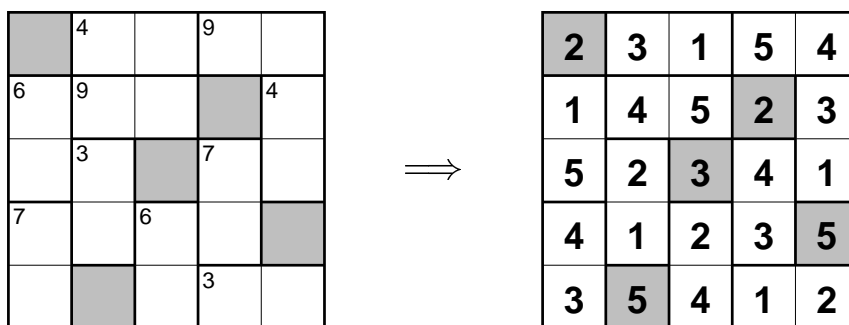
# 12

70 points

## MAGIC SUMS

Place digits from 1 to 9 into the grid such that each digit appears exactly once in each row and each column. Additionally, the sum of the digits in each region must equal the given value. The sum of the digits in gray squares is equal to 42.

**Example (with digits from 1 to 5 and sum of digits in gray squares equal 17):**



	4	15		13		16	6	
7		7			11		17	14
	7		12			4		
6		13		15				4
	8		9	11		7		
13		13			12	9		
17			5			10	12	
	9			8			6	16
13		10		4				



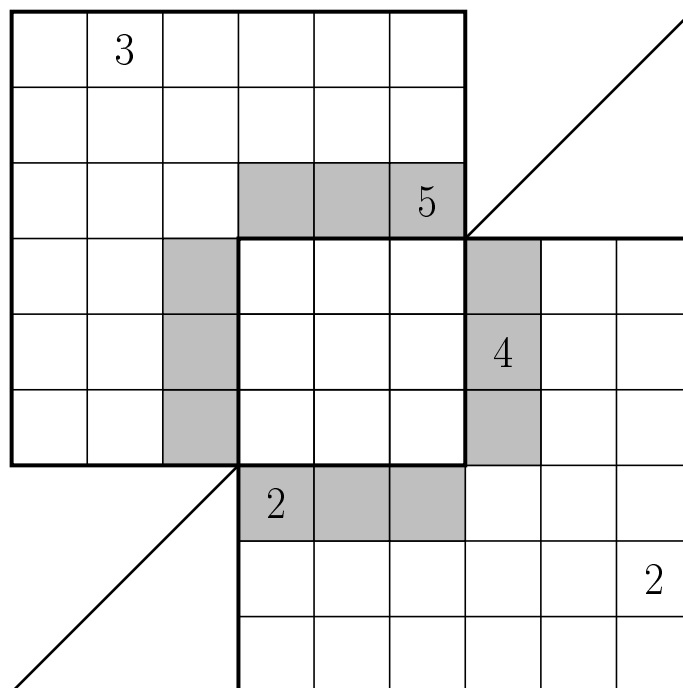
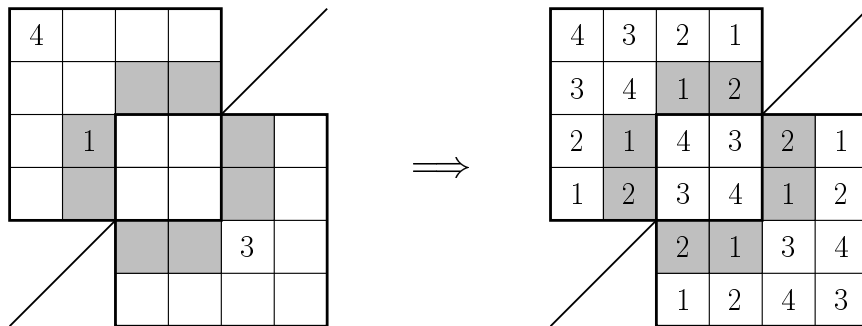
# 13

100 points

## OVERLAPPING SKYSCRAPERS

Two overlapping skyscraper puzzles must be solved. In each puzzle, the standard skyscrapers rules apply: Each row or column contains skyscrapers of different height (from 1 to 6); numbers outside the grid indicate how many skyscrapers are visible from that direction. Numbers in gray squares must act both as skyscrapers for one puzzle and as clues for the other. This applies not only to the numbers given as hints but to all numbers in the completely solved puzzle.

### Example:





# 14

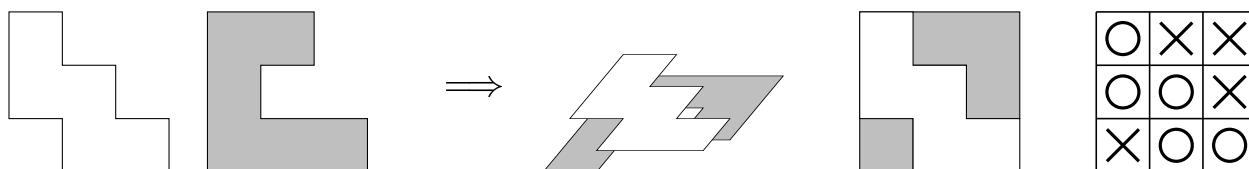
50 points

## COLORED SQUARE

Use the given pieces of colored paper to form a 5x5 square (no square may remain empty). In each row and column, each color must appear at least once. Each piece must be completely above or completely below each other, but must not be interlaced.

To write down the solution use different symbols for different colors and same symbols for same colors in the grid below.

**Example (with two colors and a 3x3 square):**






# 15

80 points

## HEXAGONAL PATH

Draw a single continuous loop by connecting neighboring dots along the dotted lines. The numbers indicate how many edges of a cell are used for the loop. The loop may not touch or cross itself, and it doesn't need to touch all of the dots.

**Example:**

