### **1. BREAKPOINTS**

Draw a continuous loop (whose sections connect the centres of the neighbouring squares by a straight line) in a way that it contains every circle and every circle is a breakpoint. The loop must not touch and cross itself.







15 points





# 2. JAPANESE PENTOMINO

Place the pieces inside the diagram in such a way that they don't touch each other anywhere, not ever diagonally. Individual pieces may be turned but not mirrored. The numbers outside the diagram indicate in order, how many parts of the pieces each row or column contains.

					1	1								3		
				4	1	2	3	1	1	3				1	1	
				1	2	2	1	1	2	2	1		1	1	3	
				1	1	1	2	1	1	1	3	5	2	2	1	
1	3	2	1													
1	1	1	3													
2	1	2	1													
		1	1													
	3	1	2													
2	1	1	1													
	3	1	2													
	2	1	1													
		3	2													
		1	2													
	1	1	1													
		4	3													
															7	u points

#### **3. TWO EXCEPTIONS**

Some letter in the grid are unnecessary. If you paint black these letters, you can read in the rows and columns the words of list. Two words are exceptions, these words you can't find in the grid. Solution: only the two exceptions.

Example:

R	А	В	А	Т	В
Ι	Ν	R	D	Ι	А
Ν	С	Ο	R	G	Ο
G	Ο	Ν	Ι	Е	D
А	Ν	Х	G	R	Е
Т	А	Ν	А	А	Ν

R	А	В	А	Т	В
Ι	Ν	R	D	Ι	А
Ν	С	Ο	R	G	Ο
G	Ο	Ν	Ι	Е	D
А	Ν	Х	G	R	Е
Т	А	Ν	А	А	Ν

ADEN, ADRIA, ANAN, ANCONA, ANRE, BONN, BRONX, CORG, GERA, GONIED, INDIA, RABAT, RIGA, TIGER

GERA	BRONX	
OLIUI	GERA	

R	L	Ο	Μ	Ν	Μ	D	Ο	Ν
L	А	S	V	Е	G	А	S	U
Ι	Р	А	U	V	А	L	R	U
Μ	Ν	Κ	U	V	А	А	Ι	Т
G	S	А	Н	А	А	L	L	Е
Μ	А	L	А	G	В	А	G	R
Ι	Ζ	Н	А	D	Ο	L	L	Е
Μ	Р	А	L	А	Ν	G	А	U
А	Ν	L	Ν	Ι	Μ	S	А	Ν

Two exceptions:



ABAR, ANSAN, DALLAS, GABON, HALLE, IZADOL, KUVAIT, LA PAZ, LAS VEGAS, LIMA, LONDON, MAAN, MALAGA, NEVADA, NUTERN, OSAKA, OSILLA, PALU, RIGA, VUHAN

## 4. ORDER IN THE COURT

Place the digits 1 or 9 into each square so that the eight different 4-digit numbers reading across and down are in increasing numerical order, as indicated by the numbers outside the grid.

Example:



A)

	7	1	6	5
4				
8				
3				
2				

25 points

B)

	3	6	5	4
2				
7				
1				
8				

#### **5. CHAMPIONS LEAGUE**

We can see in the table the result of the Champions League after the first round (only the first and second positions) in november of 2003. The representatives of the UEFA are drawing now the list of groups in the second round. The drawing has rules: 1. All the new groups get four teams: two from first position and two from second position; 2. Two teams which were in the same group in the first round, can't be in the same group in the second round; 3. Teams from the same country can't be in the same group; 4. Teams with the same initial letter can't be in the same group. What can be the result of drawing? Wich teams get in the same group? Solution: teamlists of groups.



A little help for ladies: Arsenal, Leeds, Liverpool, Manchester - England / Bayern, Leverkusen - Germany Bordeaux - France / Juventus, Lazio, Milan - Italy / Ajax, Feyenoord / Netherlands Benfica, Porto - Portugal / Barcelona, Real Madrid - Spain

### 6. LOOPS BY NUMBERS

Draw a continuous loop consisting of straight sections into the grid in a way that the loop must not touch and cross itself. The numbers outside the grid show how many squares are used in that row or column by the loop.



## 7. CIRCULAR REASONING

Ο

Divide the grid into L-shaped pieces of the same size so that each piece contains exactly two circles.

Example:

Ο	Ο	
Ο		0
Ο		0
		Ο

Ο

	Ο	Ο	
<b>&gt;</b>	Ο		Ο
	Ο		Ο
			Ο

B)

A)

			Ο		Ο	Ο	
	Ο		Ο	Ο	Ο		
	Ο	Ο			Ο	Ο	
Ο	Ο	Ο	Ο		Ο	Ο	
		Ο	Ο				Ο
						Ο	
Ο	Ο			Ο	Ο	Ο	
Ο	Ο	Ο			Ο	Ο	Ο

20 points

Ο		Ο	Ο		Ο		Ο	Ο		Ο	
	Ο		0	0	0				Ο		Ο
Ο	Ο				0		0		Ο	0	
	Ο	Ο				Ο	Ο				Ο
Ο		Ο	Ο		Ο	Ο		Ο	Ο		
	Ο		Ο	Ο	Ο	Ο				Ο	Ο
Ο			Ο		Ο						Ο
	Ο	Ο		Ο	Ο		Ο			Ο	Ο
	Ο	Ο		Ο	Ο		Ο				
		Ο	Ο	Ο		Ο			Ο	Ο	Ο
	Ο	Ο	Ο					Ο	Ο		Ο
			Ο			Ο		Ο	Ο		0

### 8. NUMBER TABLES

Divide each row of digits into three numbers and place them into the grid so that every digit is part of one vertical and one horizontal number.

Example:

5

5

8

6 1

1

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

2 2

3 5

U	•			
6	8	1	3	
3	4	2	4	

1	3	5	7
2	4	6	8

A)
----

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

4

7

→

20 points

B)

1	3	4	3	1	3	4	2	2	5	3	5	5	1	3	3
4	2	1	1	3	2	1	5	2	5	2	1	2	1	5	3
1	5	4	2	5	3	1	2	5	1	3	2	1	3	2	2
	~	4			-		~	•	~	4	4	4	•	4	4

### 9. FINNISH SNAKE

A sea serpent, 45 metres long lies hidden under the surface of the water. The animal is bent horizontally and vertically, but doesn't touch itself anywhere, not even diagonally. Its head, tail and a few other parts are visible. Can you establish its exact position?

→



e:	1			0
			0	
		0		
				15

1			0
		0	
	0		
			15

B)

A)

		1						
		0						
			0					
0				0			0	
		0						
	0					0		
			0					
0						45		

1 Ο 0 0 0 0 0 Ο 0 0 Ο 0 0 0 0 45

15 points

# **10. PASS SQUARES**

Connect the "start" and the "finish" with a line that passes throught exactly one cell of each gray 2x2 square. You may move only horizontally or vertically. The path may not touch or cross itself.



# **11. ALL FOURS**

Divide the grid into adjacent block of four squares. Numbers tell you how many parts of blocks there are in each row and culumn, but not necessarily in the correct order.



### **12. WHICH IS THE BIGGEST?**

Place the digits 1-9 into the white squares so that the digits in the gray squares must be the sum of the four digit in the neighbouring white squares. The arrows show the biggest of the four neighbouring numbers.

Example:





#### **13. MAGNETS**

The square is made up of manetic and non magnetic plates. Each magnetic plate has two halves: positive (+) and negative (-). The halves of magnetic plates with the same charge cannot border on any side as they repel each other, however their corners can touch. he numbers of positive and negative charges in each line and column are marked. One magnetic plate has already been placed in the diagram. Non-magnetic insulation plates are as big as the magnetic ones and are to be marked in black. What is the positioning of all the magnetic plates in the diagram?



### 14. PUZZLE

Put all the parts of the letter puzzle into the correct places in the diagram. The parts can't be turned or mirorred.



## **15. ROWS AND COLUMNS**

Mark a few vertical columns in the grid that will produce exactly one circle in each horizontal row.

Example:

e: .								_	
				Ο	Ο				
	Ο	Ο				Ο			
		Ο			Ο		Ο		→
			Ο			Ο			
	Ο								
			Ο	Ο			Ο		

¥		$\mathbf{\Psi}$		$\mathbf{\Psi}$		
			Ο	$\bullet$		
ullet	Ο				Ο	
	Ο			$\bullet$		Ο
		lacksquare			Ο	
$\bullet$						
		$\bullet$	Ο			Ο

A)	Ο						Ο		Ο
		Ο			Ο	Ο			
		Ο			Ο				Ο
	Ο		Ο				Ο		
				Ο	Ο			Ο	
		Ο		Ο					Ο
	Ο			Ο				Ο	
			Ο			Ο		Ο	
			Ο			Ο	Ο		

B)

		Ο	Ο		Ο					Ο		Ο		
				Ο		Ο				Ο	Ο		Ο	
	Ο						Ο	Ο				Ο		Ο
	Ο				Ο	Ο		Ο		Ο				
				Ο					Ο		Ο		Ο	Ο
Ο	Ο		Ο				Ο					Ο		
Ο						Ο		Ο			Ο			Ο
Ο		Ο		Ο			Ο		Ο					
					Ο	Ο				Ο		Ο		Ο
		Ο	Ο						Ο		Ο		Ο	
			Ο					Ο			Ο	Ο	Ο	
Ο						Ο	Ο		Ο				Ο	
	Ο	Ο			Ο			Ο	Ο					
	Ο		Ο	Ο	Ο									Ο
Ο		Ο		Ο			Ο			Ο				

20 points

#### **16. SCRABBLE**

The list below contains the names of 42 actors and actresses. Fill them in on the diagram. The diagram already contains one letter from each name. Every name crosses with one or more other names.

