

WPC French qualification

September 3rd, 2006 – Booklet

Timetable

Round	Beginning	End	Maximum points
Round 1	10.15	12.30	340 points
Round 2	14.30	15.20	120 points
Round 3	15.40	17.20	230+? points
Round 4	17.30	18.30	150 points

In all rounds, a candidate with all correct problems before the end of the round will be credited 5 points for all remaining blocks of two minutes.

1 Round 1 – WPC Classics – 135 minutes

1.1 Minesweeper 15+25 points

There are 27 mines in each diagram, at most one in a given square. The numbers inside the diagram indicate the number of mines that can be found on the squares immediately adjacent to that square (horizontally, vertically, or diagonally). Squares with a number do not contain mines.

1.2 Domino Hunt 40 points

A complete domino set (55 dominos from 0-0 to 9-9) has been placed in the grid. The sides of the dominoes have been erased and the spots have been replaced by numbers. Draw the edges of the dominoes in the grid.

1.3 Star Battle 10+25 points

Place two stars, the size of one square, in each column, each row, and each black-edged region of each grid. The stars do not touch each other, not even diagonally. The black squares do not contain a star.

1.4 Black and White 10 points

Fill each square with either a black or a white circle. All the squares containing black circles must be connected to each other horizontally or vertically. Similarly, all the squares containing white circles must be connected to each other horizontally or vertically. No 2x2 region can contain four circles of the same color.

1.5 Japanese Sums 60 points

Place digits 1-9 in the grid, only different digits in each row and column. The numbers outside the grid indicate the sum of the digits filled in consecutively, in the order in which they occur. Two different sums must be separated by at least one empty square.

1.6 Meanders 10+20 points

Locate the route, starting in the upper left corner and finishing in the lower right corner of each grid. The route meanders horizontally or vertically, and the numbers outside each grid indicate the total of occupied squares in that row or column.

1.7 Fences 5+10 points

Draw a single continuous loop by connecting neighboring dots horizontally or vertically (but not diagonally). A numbered square indicates exactly how many of its four edges are used in the loop.

1.8 Half-Dominoes 10+15 points

Put the nine half dominoes into both grids in a way that the sum of the dots in the rows, columns and diagonals is equal to the clues outside the grids. The pieces may not be rotated nor mirrored.

1.9 ABC Connect 20 points

Connect identical letters with an unbroken line. The lines can pass only through the middles of the squares and cannot overlap nor cross each other.

1.10 Loopfinder 5+15 points

Draw a continuous loop of straight sections such that: the loop connects the middles of the squares, and may turn only at middle points of squares ; the loop must not cross or overlap itself and must visit all squares. Some parts of both grids are already given.

1.11 Hiroimono 25 points

Beginning at the intersection numbered 1, enter consecutive numbers into all the vacant intersections (), moving inside the diagram according to the following rules: between two consecutive numbers, you must move in a straight line either horizontally or vertically along the edges of the diagram; you can change directions after entering a number, but you cannot make a U-turn; you must enter numbers in all the vacant intersections that you encounter.

1.12 Square Routes 5+15 points

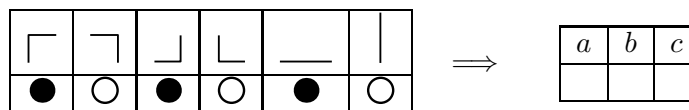
Draw a single closed loop in both grids, crossing each square exactly once. The loop runs either horizontally or vertically and must not intersect or overlap itself anywhere. The path must make a turn on the circles and make a straight line on the crosses.

2 Round 2 – Medley – 50 minutes

2.1 Alternate Corners 10 points

Draw a continuous loop in such a way that every second corner point should be in a square containing a circle. The loop crosses each square exactly once and must not intersect or overlap itself anywhere. The loop must turn when it passes through a square containing a circle.

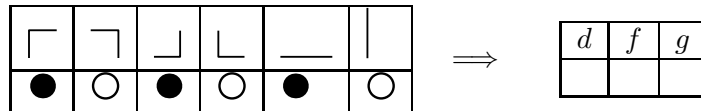
Translate the contents of the squares a , b , and c , into figures as shown. They will be used in Problem 6.



2.2 Loopfinder 10 points

Draw a continuous loop of straight sections such that: the loop connects the middles of the squares, and may turn only at middle points of squares ; the loop must not cross or overlap itself and must visit all squares. Some parts are already given.

Translate the contents of the squares d , f and g into figures as shown. They will be used in Problem 6.



2.3 Skyscrapers 10 points

Each grid symbolizes a group of skyscrapers. Each row and column contains skyscrapers of different heights (1-5). The numbers outside the grid indicate how many skyscrapers are visible from that direction (a building located behind a taller one in the same row is completely hidden).

Translate the contents of the squares h , j , and k as: even numbers encode a white square, whereas the odd numbers encode black squares. They will be used in Problem 6.

h	j	k

2.4 All Alone 10 points

Black out some of the numbers in the grid so that each row and each column contains only different digits. Black squares must not touch horizontally or vertically, and the remaining squares must all be connected to each other.

Translate the contents of the squares n , o , and p as: black squares encode black squares whereas non-black squares encode white squares. They will be used in Problem 6.

n	o	p

2.5 Hearts and Arrows 10 points

Place hearts so that every digit outside the grid shows the number of hearts in its direction. Moreover, every arrow points to exactly one heart and every heart is pointed by exactly one arrow.

Translate the contents of squares x , y , and z as: empty cells encode a white square, whereas hearts encode black squares. They will be used in Problem 6.

x	y	z

2.6 Black and White 15 points

Fill each square with either a black or a white circle. All the squares containing black circles must be connected to each other horizontally or vertically. Similarly, all the squares containing white circles must be connected to each other horizontally or vertically. No 2x2 region can contain four circles of the same colour.

Complete the data with the fifteen squares coming from the previous problems.

A white square labelled by a letter L becomes an empty square in the next problem. A black square labelled by a letter L is a square occupied by a digit in the next problem.

A	B	C	D

2.7 Easy as 1234 15 points

Place the digits 1, 2, 3, and 4 in the grid so that in every horizontal and vertical line, each digit appear exactly once. The digits outside the grid indicate the first digit seen from that direction. Complete with the data of occupied and non-occupied cells coming from the previous problem.

Copy the values of the indices G to K (an empty square is 0). They will be used in the next problem.

G	H	J	K

2.8 Tents 20 points

Locate the tents in the grid. Each tree (symbolized by T in the diagram) is connected to exactly one tent, found in a horizontally or vertically adjacent square. 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. Complete the data with the values found in the previous problem.

The position of the tent corresponding to its tree is encoded by an arrow going from the tree to its tent as follows. Translate the values from W to Z according to this rule.

↑	←	→	↓	⇒	W	X	Y	Z
2	4	6	8					

2.9 Rectangles 20 points

Divide the grid into rectangles so that each rectangle contains exactly one number, and so that each number represents the number of squares of its corresponding rectangle. Complete the data with the values found in the previous problem.

3 Round 3 – Innovative

See the other booklet file.

4 Round 4 – Magnetic Cross-sums - 60 minutes

About points

This round is divided into three stages of 20 minutes each.

A correct solution of any stage is worth 50 points. An incorrect solution is rewarded by a number of points depending on the difference between the number of correct entries and incorrect entries. If N is the total number of entries to be filled in and d the difference correct-incorrect, the corresponding points are: $5 * \text{floor}(10 * d/N)$ (if $d > 0$).

As in the other parts, a candidate with a correct problem before the end of any stage will be credited 5 points for all remaining blocks of two minutes. If there is a mistake, the sheet of paper will be returned if it's the first time it happens (one chance is given per stage and per puzzler).

Rules

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 touch each other horizontally or vertically. The numbers to the right of the grid and below it indicate the number of magnetic halves in that particular row or column.

Then, enter a single digit from 1 to 9 into each magnetic half-plate so that, in each row and column, the sums of the numbers (with signs given by their polarity) in each consecutive group of magnetic halves are equal to the values given to the left of the grid and above it, in that order. No digit can be repeated within a single group (irrespective of polarity). The non-magnetic plates do not contain any digits.

- *Stage 1 (20 minutes): solve the “magnets” puzzle (the cross-sums are replaced by “?” signs).*
- *Stage 2 (20 minutes): solve one half of the “cross-sums” puzzle (the solution of the “magnets” puzzle is given).*
- *Stage 3 (20 minutes): solve the other half of the “cross-sums” puzzle (the solution of the first half is given).*

Example

PUZZLE

SOLUTION

STAGE 1

? ? ? ? ?

2 2
2 1
1 2

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

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

STAGE 2

		4	-4	8		?	?
-3	?	+	-			-	+
4	?		+	-		+	
7	?		-	+		-	

		4	-4	8		?	?
-3	?	+4	-7			-	+
4	?		+5	-1		+	
7	?		-2	+9		-	

STAGE 3

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

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