## France/Belgium

 WPC Test 2011Part 2

## Part 2 - Swimming - 55 minutes

1. Moby Dick ..... 15
2. Islands (Nurikabe) ..... 20
3. Hashiwokakero (Bridges) ..... 15
4. Coral Finder ..... 25
5. Sea Serpent ..... 15
6. Anglers ..... 35
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8. Battleships vs. Sea Serpent ..... 95

Total: 280 points + time bonus ( 5 pts/minute)



## 1. Moby Dick

(15 points)
The grid represents an ocean, in which whales are swimming. One of them is a giant whale, which occupies a $1 \times 3$ rectangle. The others occupy $1 \times 2$ rectangles. The whales do not touch each other, not even diagonally. A cell with water cannot be covered by a whale. The clues outside the grid indicate how many whales are in the respective row or column. Find the position of all the whales.



## 2. Islands (Nurikabe)

(20 points)
Shade some empty cells black so that the grid is divided into white areas (islands), separated by blackened cells which are linked together to form a continuous sea. Each island should contain exactly one of the given numbers, which is equal to its area. The islands may touch each other only diagonally. The sea cannot form any $2 \times 2$ square.

|  |  |  |  |  |  | 7 |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  | 6 |  |  |  |  |  |  |  |
| 2 |  |  | 6 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 3 |  |
|  |  |  |  | 3 |  |  |  |  |  |
|  |  | 2 |  |  |  | 7 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  | 3 |  |  |  |  | 4 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |



## 3. Hashiwokakero (Bridges)

Connect the islands to each other by means of bridges. Every island must be reachable from every other island. The bridges may only be built horizontally or vertically, and may not cross other bridges or islands. There are at most two bridges between two given islands. The number in each island indicates how many bridges are connected to it.
(2)
(2)
(3)
(3)

(3)
(1)
(2)
(1)

(4)
(2)

1
(2)

(3)
(2)
(2)

(2)
(4)
(1)
(3) (5)
(2) (2)
(1)
(2)
(3)
(2)
(3)
(1)
(2)

(3)
(3)
(2)


## 4. Coral Finder

(25 points)
Blacken a connected set of squares (the coral) that does not touch itself, not even diagonally, and does not form any closed loops. The numbers outside the grid indicate the lengths of the consecutive parts of the coral in the given row or column. However, the numbers are given in increasing order, not in the order in which they actually appear in the grid. No $2 \times 2$ area may be covered by the coral.

|  |  |  |  |  |  |  |  |  |  |  |  |  | 1 | 1 |  | 13 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  | 1 | 1 |  | 3 |
|  |  |  |  |  |  |  |  |  |  |  | 1 |  | 1 |  |  | 2 |
|  |  |  |  |  |  |  |  |  |  |  |  |  | 1 | 6 | 6 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | 3 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | 1 | 1 |  | 1 |
|  |  |  |  |  |  |  |  |  |  |  |  |  | 1 | 7 | 7 |  |
|  |  |  |  |  |  |  |  |  |  |  | 5 | 5 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | 1 | 1 |  | 2 |
|  |  |  |  |  |  |  |  |  |  |  |  |  | 8 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | 1 | 1 |  | 11 |
| 5 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |  |  |  |  |  |  |
| 5 | 1 | 2 | 1 | 3 | 1 | 1 | 2 | 2 | 2 | 1 |  |  |  |  |  |  |
|  |  | 5 | 1 | 5 | 5 | 1 | 2 | 4 | 2 | 4 |  |  |  |  |  |  |
|  |  |  |  |  |  | 2 |  |  |  |  |  |  |  |  |  |  |



## 5. Sea Serpent

(15 points)
Place a snake in the grid. Its body may only touch itself diagonally. The clues in the grid indicate the number of cells occupied by the snake in the two directions indicated by the arrows. The snake does not pass through the gray cells. The locations of the head and tail are given.



## 6. Anglers

(35 points)
The grid represents a lake, around which anglers are standing at each position with a number. Each angler catches one fish. Their fishlines always connect the centers of adjacent squares (horizontally and vertically), and do not intersect. The numbers indicate the number of grid squares traversed by each fishline, including the cell with the fish. Every cell of the grid is occupied.



## 7. Battleships in the Minefield

(60 points)
The 10 -ship fleet shown next to the diagram (one 4 -cell ship, two 3 -cell ships, three 2 -cell ships, four 1-cell ships) is hidden in the grid. Each segment of a ship occupies a single cell. Ships are oriented either horizontally or vertically, and they do not touch each other, not even diagonally. The numbers above and to the left of the grid indicate the total number of ship segments that appear in the corresponding row or column.

The grid also contains 30 mines, at most one per square. The digits already present in the grid, as well as those on the ship segments, indicate the number of mines present in the immediately adjacent squares (horizontally, vertically, and diagonally).

Locate the fleet and the mines, given that the squares containing a digit cannot contain a mine nor a ship segment, and that the squares containing a ship segment cannot contain a mine.

|  | 1 | 1 | 5 | 1 | 0 | 2 | 1 | 6 | 1 | 2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 3 | 2 |  |  |  | 0 |  |  |  |  |  |
| 1 |  |  |  |  |  |  |  |  |  |  |
| 0 |  | 3 |  |  | 1 |  |  |  |  | 0 |
| 3 |  |  |  |  |  |  |  |  |  |  |
| 7 |  |  |  |  |  |  |  |  |  |  |
| 1 |  |  |  |  |  |  |  |  |  |  |
| 0 |  | 4 |  |  | 5 |  |  |  |  | 1 |
| 2 |  |  |  |  |  |  |  |  |  |  |
| 1 | 0 |  |  |  |  |  |  |  |  |  |
| 2 |  |  |  |  | 2 |  |  |  |  | 2 |

(2) 4 3 3

| 2 | 2 | 4 | 2 | 2 |
| :--- | :--- | :--- | :--- | :--- | 4 | 1 | 2 | 1 | 2 | 1 |
| :--- | :--- | :--- | :--- | :--- |



## 8. Battleships vs. Sea Serpent

(95 points)
The 10 -ship fleet shown next to the diagram (one 4 -cell ship, two 3 -cell ships, three 2 -cell ships, four 1 -cell ships) is hidden in the grid. Each segment of a ship occupies a single cell. Ships are oriented either horizontally or vertically, and they do not touch each other, not even diagonally. The numbers above and to the left of the grid indicate the total number of ship segments that appear in the corresponding row or column.

The grid also contains a sea serpent, consisting of horizontal and vertical line segments connecting adjacent squares of the grid. The snake occupies 45 squares, and cannot touch itself, not even diagonally. The numbers below and to the right of the grid indicate the number of squares occupied by the snake in each row or column. The extremities of the snake are given. Locate the snake and the fleet, given that ships cannot occupy the squares traversed by the snake.


