## Logic Puzzle Open

## Round 1: "Pop Culture"

Name:
Division: $\square$ Advanced $\square$ Beginner

| 1.1 Sudoku | 3 points | 1.10 TomTom | 3 points |
| :--- | :--- | :--- | :--- | ---: |
| 1.2 Sudoku | 5 points | 1.11 TomTom | 6 points |
| 1.3 Sudoku | 9 points | 1.12 TomTom | 10 points |
| 1.4 Numberlink | 2 points | 1.13 Scrabble | 3 points |
| 1.5 Numberlink | 5 points | 1.14 Scrabble | 5 points |
| 1.6 Numberlink | 6 points | 1.15 Scrabble | 9 points |
| 1.7 Minesweeper | 2 points | 1.16 Hidato | 3 points |
| 1.8 Minesweeper | 3 points | 1.17 Hidato | 7 points |
| 1.9 Minesweeper | 7 points | 1.18 Hidato* | 12 points |

Total: 100 points

## 1.1-1.3: Sudoku

Insert a number from 1 to 9 ( 1 to 6 in the first puzzle) so that no number repeats in any row, column, or box.

## Puzzle 1.2 (5 Points)

Puzzle 1.1 (3 Points)

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


|  | 1 |  |  |  |  |  | 3 |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 4 |  | 8 |  |  |  | 2 |  | 1 |
|  | 7 |  | 2 |  | 6 |  | 5 |  |
|  |  | 3 |  | 5 |  | 8 |  |  |
|  |  |  | 1 |  | 9 |  |  |  |
|  |  | 5 |  | 4 |  | 9 |  |  |
|  | 2 |  | 8 |  | 3 |  | 9 |  |
| 7 |  | 6 |  |  |  | 1 |  | 5 |
|  | 9 |  |  |  |  |  | 7 |  |

Puzzle 1.3 (9 Points)

|  |  |  |  |  | 9 |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | 1 |  |  | 5 | 2 | 7 |  |  |
| 2 | 3 | 4 |  |  | 8 |  |  |  |
|  | 7 |  |  |  |  |  | 1 |  |
| 1 | 8 | 6 |  |  |  | 2 | 3 | 4 |
|  | 9 |  |  |  |  |  | 7 |  |
|  |  |  | 9 |  |  | 1 | 8 | 6 |
|  |  | 5 | 2 | 7 |  |  | 9 |  |
|  |  |  | 8 |  |  |  |  |  |

## 1.4-1.6: Numberlink

Draw non-intersecting paths through the centers of some cells, each connecting one clue to its equal counterpart.
(Note: all cells will be used in the final solutions to these puzzles.)

Puzzle 1.4 (2 Points)

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

Puzzle 1.5 (5 Points)

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


|  |  |  |  |  | 1 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2 |  |  |  |  |  | 3 | 4 | 5 |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | 6 |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | 2 |  |
| Puzzle 1.6 |  | 7 |  | 8 |  |  |  |  |  |  |
| (6 Points) |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | 3 |  | 6 |  |  |
|  | 4 |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | 9 |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  | 7 | 9 | 8 |  |  |  |  |  | 1 |  |
|  |  |  |  |  | 5 |  |  |  |  |  |

## 1.7-1.9: Minesweeper

Place mines into some empty cells so that each clue has the indicated number of mines in the (up to) eight surrounding cells.

Puzzle 1.7 (2 Points)

|  |  | 2 | 2 |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | 4 |  |  | 5 | 5 |  |
|  | 4 |  |  |  |  | 3 |
| 3 |  |  | 5 |  |  | 3 |
| 3 |  |  |  |  | 5 |  |
|  | 2 | 2 |  |  | 5 |  |
|  |  |  | 2 | 2 |  |  |

Puzzle 1.8 (3 Points)


Puzzle 1.9 (7 Points)

| 1 |  | 1 | 1 |  | 1 |  | 2 |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | 3 |  | 3 |  | 2 |  |  | 4 |  |
|  |  |  |  |  |  |  | 1 |  |  |
| 1 | 2 | 3 | 4 | 5 |  | 4 |  | 2 |  |
|  |  |  |  |  |  |  | 3 |  | 1 |
| 1 |  | 2 |  |  |  |  |  |  |  |
|  | 2 |  | 3 |  | 3 | 2 | 1 | 2 | 1 |
|  |  | 4 |  |  |  |  |  |  |  |
|  | 5 |  |  | 4 |  | 3 |  | 2 |  |
|  |  | 3 |  | 3 |  | 2 | 1 |  | 1 |

### 1.10-1.12: TomTom

Place a number from 1 to N into each cell so that each row and column contains every number from that range with no repeats, where $N$ is the side length of the grid. A clue represents the value obtained by applying an operation iteratively on the numbers in the region the clue is in. If no operation is given, it may be any of,,$+- \times$, or $\div$. Subtraction and division in regions with more than two numbers are handled by taking the largest number and subtracting/dividing all the others. For example, a region clued with 1 - can have 3,6 , and 2, as 6-3-2 = 1, but it can't have 4, 5, and 2.

Puzzle 1.10 (3 Points)


Puzzle 1.11 (6 Points)


| 24 |  | 23 |  | 45 |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 7 |  | 8 |  |  |  |
| 7 |  |  |  |  | 4 |
|  | 16 |  | 8 |  |  |
| 20 |  |  |  | 13 |  |
|  |  |  |  |  |  |

### 1.13-1.14: Scrabble

Place a letter in some cells of the grid so that all letters form one orthogonally connected area. Every consecutive group of 2+ letters in a row or column forms a word read from left to right or from top down. All words are given outside the grid and must appear exactly once.

Puzzle 1.13 (3 Points)


SUNDAY MONDAY<br>TUESDAY<br>WEDNESDAY<br>THURSDAY<br>FRIDAY<br>SATURDAY



### 1.15: Scrabble

Place a letter in some cells of the grid so that all letters form one orthogonally connected area. Every consecutive group of 2+ letters in a row or column forms a word read from left to right or from top down. All words are given outside the grid and must appear exactly once.

$$
\text { Puzzle } 1.15 \text { (9 Points) }
$$


ATHENS
D E N V ER
BALTIMORE
DETROIT
PORTLAND
CAMBRIDGE
CHICAGO
FRESNO
READING
TACOMA
LAREDO SANTACLARA
WACO
DALLAS
NEWARK STLOUIS

### 1.16-1.18: Hidato

Place a number from 1 to N into each cell so that every number appears once, where $N$ is the total number of cells in the grid. Every number must be adjacent (orthogonally or diagonally) to all numbers in the grid that are consecutive with it. Note: you can either place all numbers or draw a complete path.


Puzzle 1.18
(12 Points)

|  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  | 81 |  |  |  |
|  |  |  | 66 |  |  |  | 153 |  |  |  |
|  | 90 |  | 76 |  |  |  |  |  |  |  |
| 2 | 3 |  |  |  |  |  |  | 5140 |  |  |
|  |  |  |  |  |  |  |  | 7143 |  |  |
|  |  | 114 |  |  |  |  |  |  |  |  |
|  |  | 112 |  |  |  |  |  |  | 244 |  |
|  |  |  |  |  |  | 135 |  |  | 0131 |  |
|  |  |  | 30 |  |  | 124 |  |  |  |  |
|  |  | 26 | 25 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |

