

PQRST 03 PUZZLE COMPETITION

PUZZLE 1 (10 points penalty for a wrong answer) 40 points

Next It

The numbers are in a logical order in the sequence below. What are the following two numbers?

MINUS TWO, MINUS ONE, MINUS TWO, ZERO, ONE, THREE, TWO, ?, ?

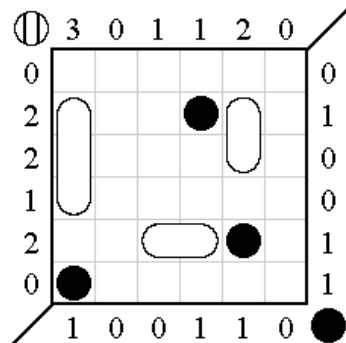
Answer key: Enter the two numbers in order. Write them in letters.

PUZZLE 2 (20 points penalty for a wrong answer) 75 points

Level Battleships

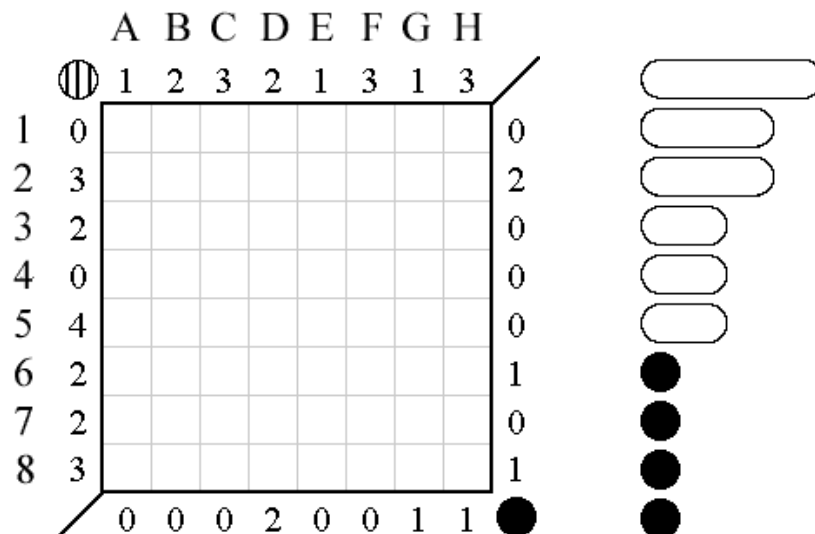
In this Battleships variation, there are two levels: 1-cell submarines are under the sea, and the other ships are on the sea level. In each level, ships don't touch each other, not even diagonally. A submarine may be in a neighbouring cell of another ship from the top level, but can not be under a ship, that is they can't be on the same cell. Locate the ships into the grid.

Example:



Numbers on the left and top of the grid reveal the number of ship segments occupied by the ships on the sea level.

Numbers on the right and bottom of the grid reveal the number of submarines.

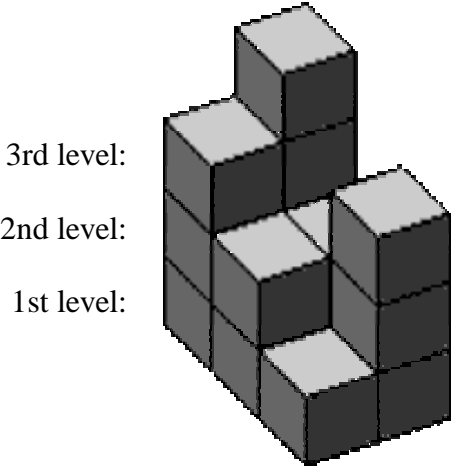


Answer key: Enter the coordinates of the four submarines in the form A-1, ..., H-8.

PUZZLE 3 (10 points penalty for a wrong answer) 35 points

3D-section

The object below is made of 15 small cubes, and it stands on 6 of them. Dissect it into three smaller parts. Parts are exactly same in size and shape, but may be rotated.



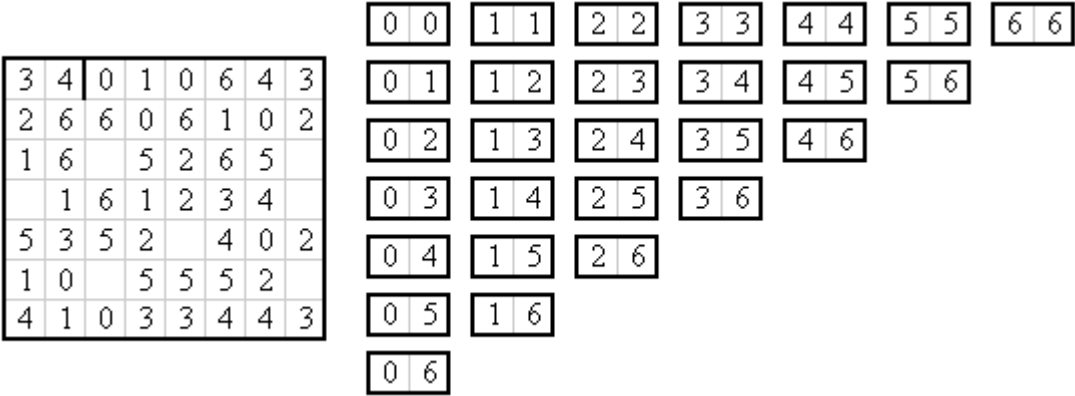
Answer key: Enter the number of parts consisted for each level, in order. First, number of parts 1st level consists (1, 2 or 3). Second, number of parts 2nd level consists (1, 2 or 3). And third, number of parts 3rd level consists (1, 2 or 3).

PUZZLE 4

85 points

Domino Spaces

A complete domino set of 28 dominoes (0-0, 0-1, 0-2, ..., 6-6) have been placed in the diagram. However, the sides of the dominoes have been removed and the spots have been replaced by numbers. Additionally, there are blank spaces to be filled with the numbers 0, 1, 2, 3, 4, 5, 6, once of each. Fill these seven spaces and reconstruct the missing edges. Note: The border between 4 and 0 means that these two numbers can not be joined to form the domino 0-4.



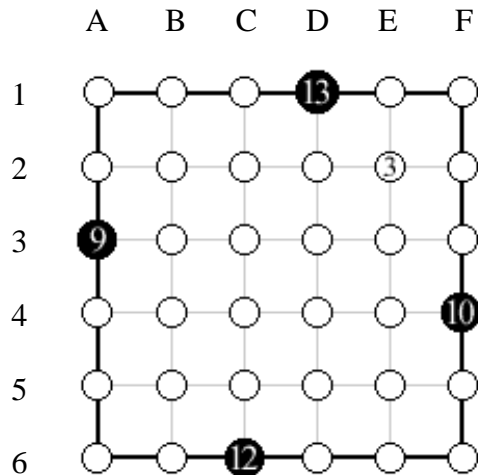
Answer key: Enter the numbers in the blank spaces in order. Go from top row to bottom row. Write the number on the left first, in the same row.

PUZZLE 5

85 points

Observers

Black circles represent four observers and white circles represent platforms for stones. Locate five stones valued 1, 2, 3, 4, 5 into five of the white circles so that each observer sees the total value of the number what is written on it. An observer sees a stone if that stone is not blocked by any other. 3 is already located for you.



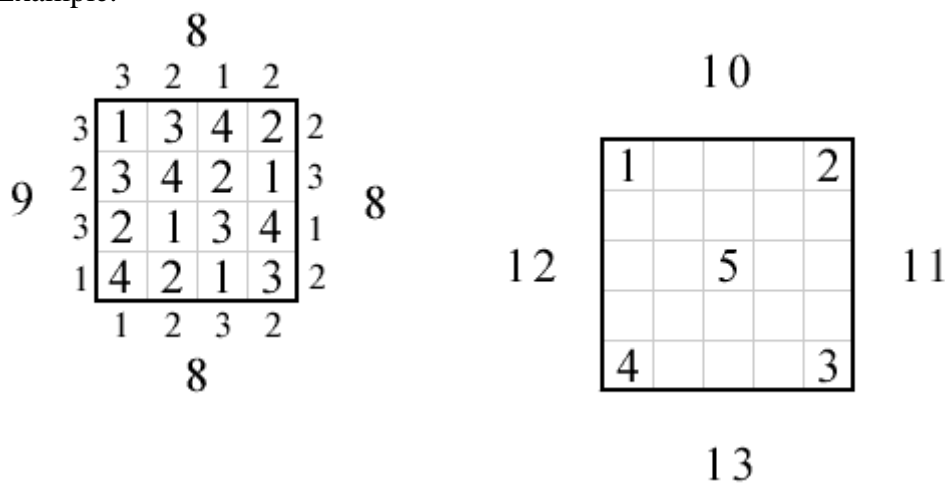
Answer key: Enter the coordinates of the stones 1, 2, 4, 5 in order, in the form A-1, ..., F-6.

PUZZLE 6 (15 points penalty for a wrong answer) 95 points

Side-Seeing

Locate five buildings with heights 1, 2, 3, 4, 5 into every row and every column of the grid, once each. The numbers on the four sides tell you how many buildings can be seen from that side, looking row by row or column by column. You can see a building only when all the buildings in front of it are shorter.

Example:



Answer key: Enter the numbers in the fourth row from the top, in order, from left to right. For the example, the answer key would be: 4213.

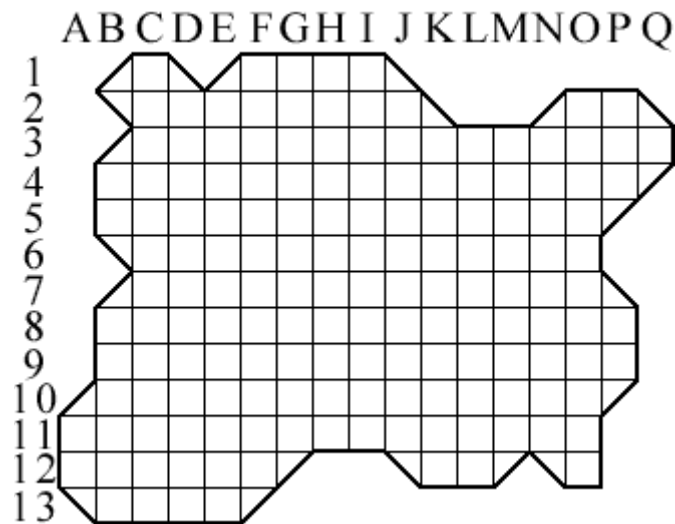
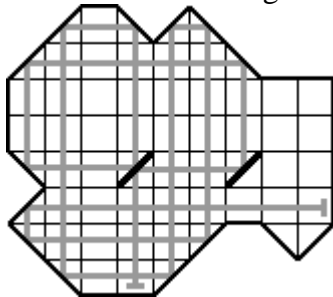
PUZZLE 9 (solutions for Length>110) (Length-110)x5 points

Three Mirrors

Below is the diagram of a house with mirror-walls. Add three diagonal mirrors into three of the cells that don't contain diagonal mirrors. Then draw the longest path of a light according to the following rules: Your light can start in any cell and the first direction must be horizontal or vertical. You may cross your path any time. Continue until you are forced to retrace part of your path. Cells where the path crosses twice are counted twice.

Example with a path length of 66:

Note that both sides of the mirrors reflect the light.



Answer key: Enter your path's length first. Then enter the coordinates of the three mirrors, in the form C-1, ..., O-12. Use letter 'X' for mirrors in the form /, and use letter 'Y' for mirrors in the form \. Finally, enter the coordinate of your starting cell with your first direction (north, south, west or east). For the example, answer key would be: 66, X(D-5), X(G-5), D-8(north).

PUZZLE 10 (solutions for N>10)

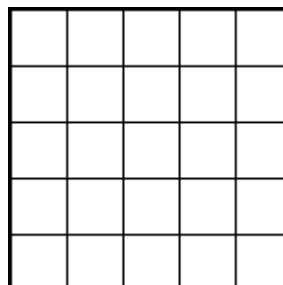
(N-5)x10 points

Number Boggle

Place letters into the 5x5 grid so that numbers can be spelled out as on a Boggle board. That is in order by proceeding from letter to consecutive letter horizontally, vertically or diagonally. Numbers must be read in order starting from O, N, E, T, W, O, T, ... till the last letter of N. Maximize N. You will also get 2 points for each blank cell in your solution.

Example:

N	E	F
T	O	R
W	H	U



Answer key: Enter N first. Then enter the letters in the rows in order, starting with the top row. Use B for blank cells. For the example, the answer key would be: 4: NEF, TOR, WHU.

END