Melon's Puzzle Zoo

Instruction Booklet

Welcome to the Puzzle Zoo run by me, MellowMelon, featuring a large number of unique kinds of puzzles that to the best of my knowledge made their first appearance on my website, if anywhere. Admission to the zoo is free, but you will only have two hours (120 minutes) to tour the place and solve whatever puzzles you can.

The zoo is divided into three sections. The first is Aliens, representing some of my own original puzzle types. The second is Mutants, showcasing some of my variations on familiar Nikoli types. The final is Hybrids, in which each type is a combination of two types, both selected among either Nikoli types or my own original ones. There are four different types of puzzles in each section, for twelve types total.

For each puzzle type in the Alien and Mutant sections, the zoo has two specimens. The first is a baby version, which should prove fairly docile. The second is an adult version. Caution is advised when viewing the adults, as they can be quite aggressive. However, the adult is worth significantly more if successfully solved. The Hybrid section has only adult specimens, with no babies. This means there are 20 puzzles total in the test.

The name of each kind of puzzle, along with the baby and adult point values are given in the table below. The 8 baby puzzles are worth a total of 250 points, and the 12 adult puzzles are worth a total of 750 points, meaning that 1000 points are available. Ties are broken by time remaining.

Detailed instructions for each type are given on the remaining pages of this booklet.

		Baby	Adult
Alien 1	Castle Wall	30	60
Alien 2	Out of Sight	25	60
Alien 3	International Borders	30	60
Alien 4	Double Back	30	60
Mutant 1	Akari EX	30	65
Mutant 2	Line Nurikabe	30	60
Mutant 3	Liar Slitherlink	40	70
Mutant 4	Nonconsecutive Fillomino	35	85
Hybrid 1	Castle Wall / Masyu		50
Hybrid 2	Yajilin / Akari		55
Hybrid 3	Nurikabe / Fillomino		60
Hybrid 4	Double Back / Country Road		65

Credits
Designed and written by Palmer Mebane.
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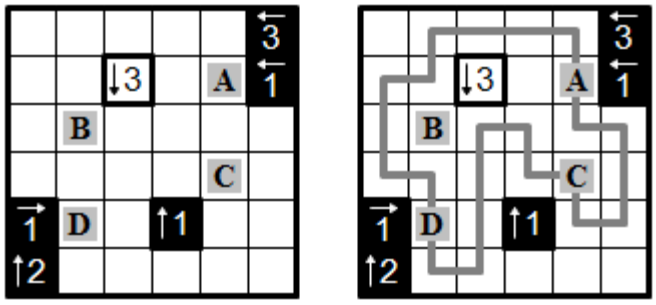
Thanks to David Millar for the baby icon.

PUZZLE INSTRUCTIONS

The instructions for these puzzles exist also as a blog post, which can be found at http://mellowmelon.wordpress.com/2011/02/12/puzzle-zoo-instructions/.
It contains essentially the same content, plus links to additional references and practice material for most of the types.

In these instructions, the word "adjacent" refers to touching in one of the four cardinal directions. Touching at a corner or diagonally is not considered adjacent.

Alien 1: Castle Wall



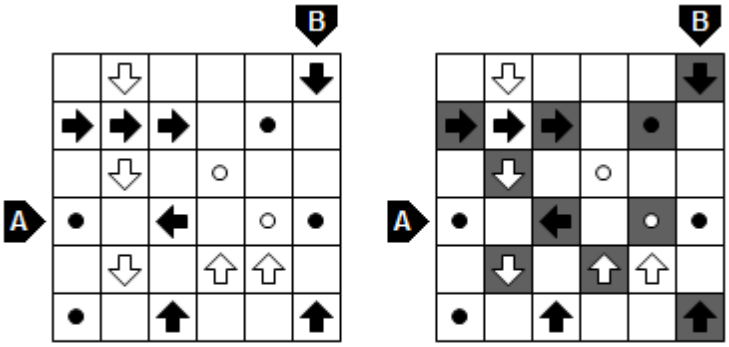
Answer: 6787

Draw a single closed loop of horizontal and vertical segments passing through adjacent squares that does not intersect itself. Squares with thick borders represent clues and cannot be part of the loop. If a clue is shaded white, it must be inside the loop. If it is shaded black, it must be outside the loop. Some clues may have a number and arrow. If the arrow points left or right, the number in that cell tells the total length of horizontal segments in the arrow's direction. Likewise, if there arrow points up or down, the number tells the total length of vertical segments. Equivalently, the number tells how many cell boundaries in the arrow's direction are crossed by the path. Note that segments counted by arrows do not have to be consecutive, and that the arrow can point past other clue squares - clues don't block visibility.

Answer Entry: Some squares are marked with letters. For each letter in alphabetical order, determine how many of the nine squares bordering the lettered square, including the square itself, are used in the loop. Enter these digits in alphabetical order by letter.

Alien 2: Out of Sight

Shade in some of the grid squares. No two shaded squares should be adjacent, and all of the unshaded squares should form a single contiguous area – equivalently, any two unshaded squares should have a path joining them through adjacent unshaded squares. Any unshaded arrow should not point to any unshaded cells with a symbol, dot or arrow, of the same color. A shaded arrow need not point to a symbol of the same color. Arrows point past any shaded squares.

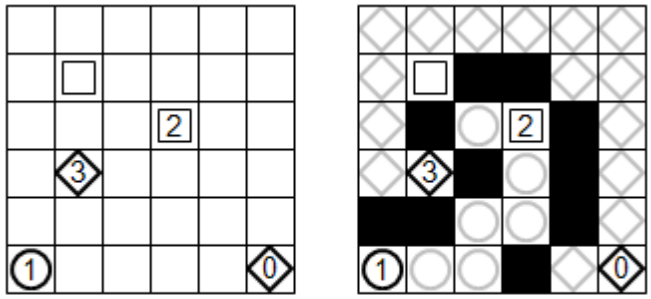


Answer: 001010, 100001

Answer Entry: Enter the contents of each cell in the marked rows and columns . Use 0 for an unshaded cell and 1 for a shaded cell.

Alien 3: International Borders

Shade in some squares to form a boundary that partitions the grid into two contiguous countries, Circleland and Diamondia. There can be no path through adjacent unshaded squares from one country to the other. Any space with a shape must be unshaded. A circle must be contained in Circleland, and a diamond must be contained in Diamondia. If a space has a square, it is not known which country it is located in. If a shape has a number inside of it, that tells how many of the four adjacent squares are shaded and part of the boundary. All shaded squares must be adjacent to both Circleland and Diamondia, meaning there cannot be any "useless" shaded squares.

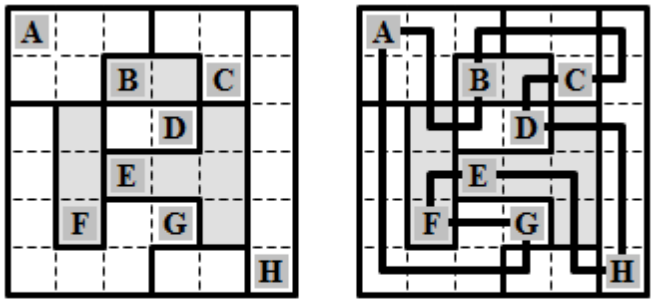


Answer: 0, 0, 2, 1, 2, 3

Answer Entry: Enter the numbers of grid squares contained in Circleland in each row from top to bottom, separated by commas.

Alien 4: Double Back

Draw a single closed loop of horizontal and vertical segments passing through adjacent squares. Every square must be visited exactly once. Each thickly outlined region must be visited exactly twice. Ignore the shading of regions and the letters in some squares for purposes of solving.

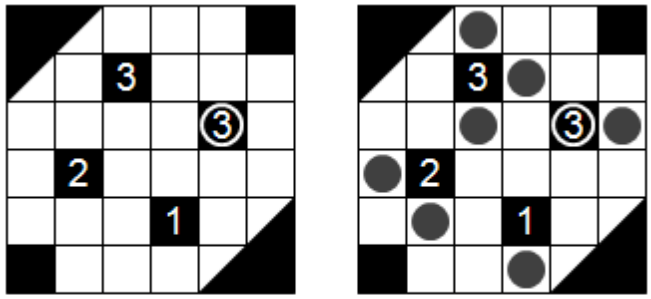


Answer: ABCDHEFG

Answer Entry: Start from the "A" in the top left corner and move right along the path until you return to the A again. Enter the letters you encounter in order.

Mutant 1: Akari EX

This puzzle is based off of Nikoli's Akari. Place lightbulbs in some cells. Each lightbulb illuminates every square in the four compass directions, similar to a rook in chess, up to the edge of the grid or a black cell. All grid squares must be illuminated, but no two lightbulbs can illuminate each other.



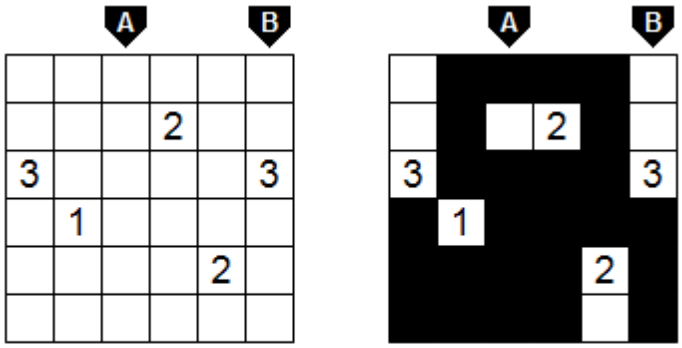
Answer: 112111

In Akari EX, some walls are triangular, representing mirrors. Light reflects at a 90 degree angle off of these squares and continues on. There is no requirement to illuminate squares with mirrors. Walls with uncircled numbers tell how many of the four adjacent squares contain a lightbulb. Walls with circled numbers tell how many edges of the wall are illuminated by light, whether reflected or not. Light passing through an adjacent square parallel to the wall does not count.

Answer Entry: Enter the digits corresponding to the total number of lightbulbs in each row from top to bottom.

Mutant 2: Line Nurikabe

This puzzle is based off of Nikoli's Nurikabe. Shade in some of the cells in the grid. All shaded cells must form one contiguous region connected by adjacent squares – shaded squares touching at a corner are not connected. Each connected region of unfilled cells must contain exactly one number, which tells how many cells are in that region.



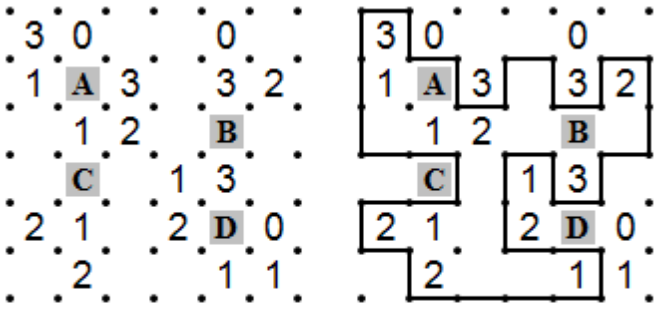
Answer: 101111, 000111

In Line Nurikabe, it is not allowed to have five consecutive black cells in a row or column. The usual Nurikabe restriction that there can be no two by two squares of black cells does not apply in this puzzle.

Answer Entry: Enter the contents of each cell in the marked rows and columns. Use 0 for an unshaded cell and 1 for a shaded cell.

Mutant 3: Liar Slitherlink

This puzzle is based off of Nikoli's Slitherlink. Draw a single closed loop of horizontal and vertical segments passing through adjacent dots that does not intersect itself. A number tells how many of the four adjacent edges of the square are part of the loop. Ignore the letters for the purposes of solving.



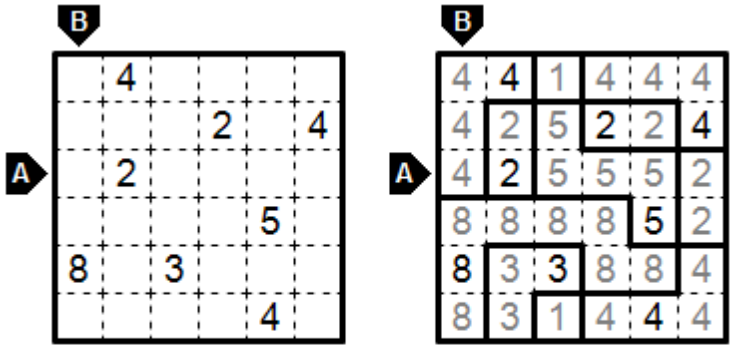
Answer: 6673

In Liar Slitherlink, exactly one number in each row and column is false. You must determine which clues are the liars.

Answer Entry: Some squares are marked with letters. For each letter in alphabetical order, determine how many of the nine squares bordering the lettered square, including the square itself, are contained inside the loop. Enter these digits in alphabetical order by letter.

Mutant 4: Nonconsecutive Fillomino

This puzzle is based off of Nikoli's Fillomino. Fill in each grid cell with a number to partition the grid into polyominoes connected by equal, adjacent numbers. Each number gives the size of the polyomino it is contained in. No two adjacent polyominoes can have the same size. A polyomino can contain any amount of given numbers, including zero.



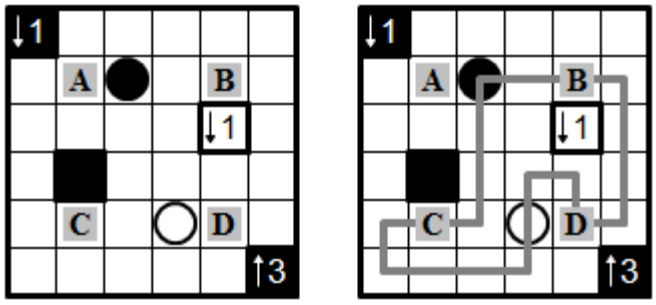
Answer: 425552, 444888

In Nonconsecutive Fillomino, any two adjacent polyominoes must differ in size by at least two.

Answer Entry: Enter the units digit of each number in the marked rows and columns. For instance, if a 4 or 14 appears in the row or column you would enter 4 for it.

Hybrid 1: Castle Wall / Masyu

Draw a single closed loop of horizontal and vertical segments passing through adjacent squares that does not intersect itself. Squares with thick borders represent clues and cannot be part of the loop. If a clue is shaded white, it must be inside the loop. If it is shaded black, it must be outside the loop. Some clues may have a number and arrow. If the arrow points left or right, the number in that cell tells the total length of horizontal segments in the arrow's direction. Likewise, if there arrow points up or down, the number tells the total length of vertical segments. Note that segments counted by arrows do not have to be consecutive, and that the arrow can point past other clue squares - clues don't block visibility. In addition, the loop must pass straight through any cell with a white circle and turn at one or both of the adjacent squares. The loop must also turn in any cell with a black circle and go straight at both of the adjacent squares.

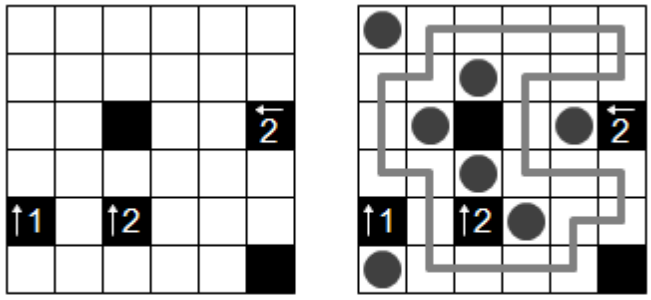


Answer: 2477

Answer Entry: Some squares are marked with letters. For each letter in alphabetical order, determine how many of the nine squares bordering the lettered square, including the square itself, are used in the loop. Enter these digits in alphabetical order by letter.

Hybrid 2: Yajilin / Akari

Place lightbulbs in some cells. Each lightbulb illuminates every square in the four compass directions, similar to a rook in chess, up to the edge of the grid or a black cell. All grid squares must be illuminated, but no two lightbulbs can illuminate each other. Then draw a single closed loop of horizontal and vertical segments passing through every square that is not black and does not contain a lightbulb. Some black cells may contain a number and arrow. For these cells, the number tells how many cells in the direction of the arrow are lightbulbs.

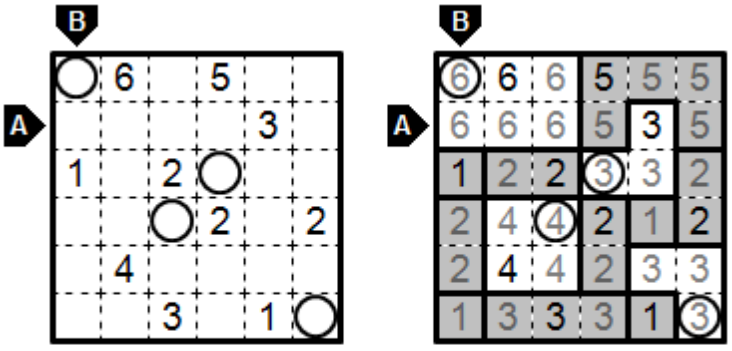


Answer: 112111

Answer Entry: Enter the digits corresponding to the total number of lightbulbs in each row from top to bottom.

Hybrid 3: Nurikabe / Fillomino

Fill in each grid cell with a number to partition the grid into polyominoes connected by equal, adjacent numbers. Each number gives the size of the polyomino it is contained in. No two adjacent polyominoes can have the same size. No polyomino should contain two or more circled cells. A polyomino can contain any amount of given numbers, including zero. Then fully shade in any polyomino that does not contain a circled cell. All shaded cells must form one contiguous region connected by adjacent squares – shaded squares touching at a corner are not connected. There cannot be any two by two square of shaded cells. No two unshaded polyominoes can be adjacent.

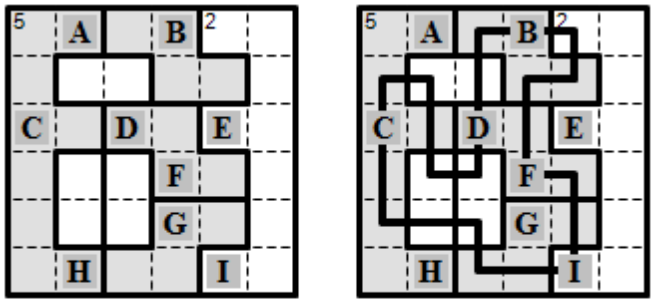


Answer: 666535, 661221

Answer Entry: Enter the units digit of each number in the marked rows and columns. For instance, if a 4 or 14 appears in the row or column you would enter 4 for it.

Hybrid 4: Double Back / Country Road

Draw a single closed loop of horizontal and vertical segments passing through adjacent squares in the grid. Each thickly outlined region must be visited exactly twice. For any two adjacent squares not in the same region, at least one must be passed through by the loop. In other words, two adjacent unused squares cannot straddle a region boundary. A number in a cell of a region tells how many cells in that region are passed through by the loop. Ignore the shading of regions and the letters in some squares for purposes of solving.



Answer: BFICD

Answer Entry: Start from the first letter alphabetically that is part of the loop and travel clockwise around the loop until you return to the original letter. Enter the letters you encounter in order. Not all letters may be used.