

# Melon's Puzzle Packs

## Volume II: Statue Park

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### Introduction

This pack contains 45 Statue Park puzzles, 41 by me and 4 by guest authors. All use the standard set of rules, and none of them have even labelled black circles. However, the range of shape banks used for these puzzles is much greater than in the instances of this type I have posted before. For those solvers who are less experienced or unfamiliar with Statue Park, the first section goes over the rules and a lot of strategies for solving these.

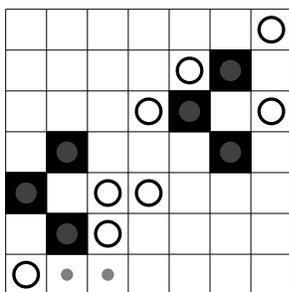
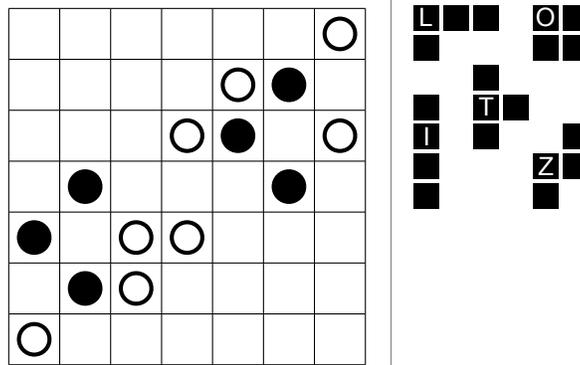
Each puzzle has a certain number of melon icons at the top right indicating the difficulty of the logical solution as estimated by the author. The more melons, the harder the puzzle. But keep in mind that your experience may vary. Also, the indicated difficulty means little if you attempt to solve any of these with intuition or guesswork rather than logic.

If you are struggling with a puzzle, the Hints section provides a tip for each puzzle that may help, usually describing how to get past a sticking point near the start. Solutions are in the back if you get really stumped or want to check your work.

# Statue Park Rules and Tips

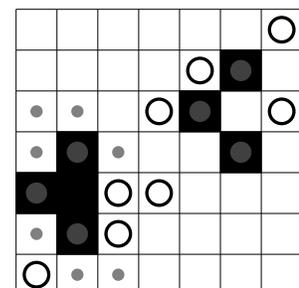
A Statue Park puzzle gives you both a grid of black and white circles and a bank of shapes. The object of the puzzle is to place each of the shapes into the grid as shaded squares; all shaded squares are part of some shape in the bank. Shapes may be rotated or reflected. Black circles indicate grid squares that must be shaded and part of one of the shapes. White circles indicate grid squares that must not be shaded, meaning they must not be part of any shape. Finally, two shapes may not touch at an edge, and all of the unshaded squares must be connected through adjacent squares, where two squares touching at a corner are *not* considered adjacent.

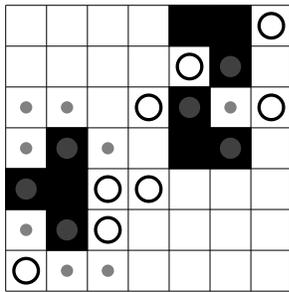
Below is a small example puzzle, with the grid on the left and the bank of shapes on the right. We will walk through how one would solve this puzzle logically.



We use connectivity of the white cells to start. Notice the white circle on R7C1 is almost boxed in, and if any of R7C2 or R7C3 were shaded it would be separated from the rest of the puzzle. Therefore, we know those cells cannot be shaded. We mark them with dots to remind ourselves that they are unshaded.

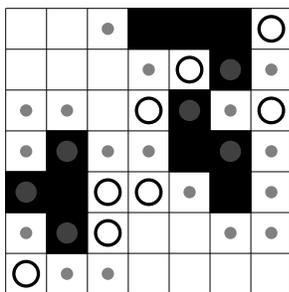
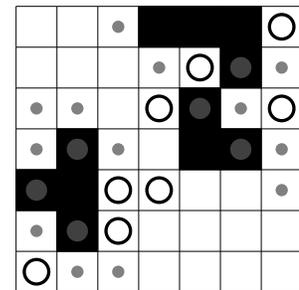
A little bit of thought about the black circle on R6C2 shows that the only way for it to be a part of a shaded area with exactly four cells is if R5C2 is shaded. So we have now formed the T shape, and since no other shaded cells can be adjacent to it we can mark some more dots.





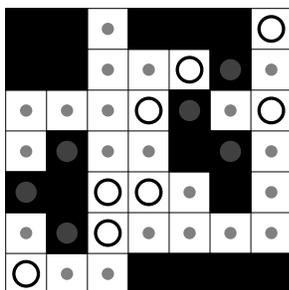
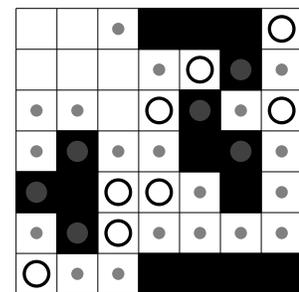
Since the T shape has been made, we can't shade R3C6, as that would form another T shape. Then from the fact that the black circles above and below can't be part of a shaded area with size less than four, we can shade in some more squares.

Like with our first step, the white circle on R1C7 is almost sealed in. Making sure it has a way out allows us to put in some dots along column 7. In particular the dot on R2C7 tells us how to finish the shape in the top right, which turns out to be the L tetromino.



We have a shape almost completely formed in the right center. There are three ways to give it a fourth cell: R4C4, R5C5, R5C6. However, in the case of the first two this would form another copy of the T shape, which we already used. So the fourth cell has to be R5C6, and we now have the Z shape.

We've now used all of the black circles, so it's time to think about how to fit the remaining shapes in the empty areas of the grid. We have the O and I left. It should be easy to see that there's only one line of four consecutive blank squares, and this must be the location of the I.



All we have left is the O, and there is clearly just one area of two by two squares that can possibly be shaded. We put the O there, and the puzzle is complete.

## General Strategies

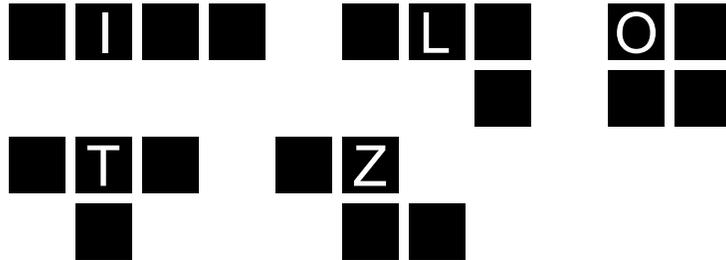
Here is a long list of techniques and methods for solving Statue Park puzzles. Despite its length it is not comprehensive, and you may need to develop even more intricate logic to solve the hardest puzzles in this pack.

- Shape placement puzzles like Statue Park are a little more suited to guessing and intuition than other logic puzzle types. If you get really, really stuck, trying to intuit your way to the solution is one option. However, all the puzzles in this pack have been designed to have clean logical solutions, so please know you are missing out on the enjoyment by taking this route.
- Keep track of the shapes you've used up and take care to avoid making another copy of them. This is your bread and butter logic when in the middle of one of these puzzles. Near the end, switch to thinking about how you can place the shapes you have left instead of trying to avoid the ones you've made.
- Almost all the puzzles in this pack have banks where all of the shapes have the same number of shaded squares. This means that any black circle must be part of a connected group of black squares of exactly that size. So don't box a black circle into too small of a space, and also don't connect two shaded areas if it would make them too big.
- Know the properties of the shape bank. For instance, the only three pentominoes that have four blocks in a line are the I, L, and Y. If you have none of them left in the bank, then you can't have any other lines of four shaded squares in any row or column.
- In general, the fewer distinct rotational and reflectional symmetries a piece has, the fewer options it has when trying to place it in the grid. This is why if you ever get stuck in a pentomino puzzle with an X (which has one symmetry) left in the bank, looking for all the ways to place often leads to a way forward. This also applies to shapes like the O tetromino and T pentomino to a lesser extent.
- Some puzzles have patterns of clues that make it very difficult to place a certain shape. A simple example is that if most of the black circles are diagonally adjacent to others, pieces like the I tetromino or pentomino are difficult to place. Study the clue configuration and the shape bank to try to identify any such shapes. In some cases the first step of the puzzle is to find the only way to place one of the shapes in the bank.
- It can be extremely helpful to identify a general location of a shape even if you can't uniquely position it. If you can determine the general areas of all the copies of a shape, you know it can't appear anywhere else. For many puzzles in this pack, observations like this are key steps.

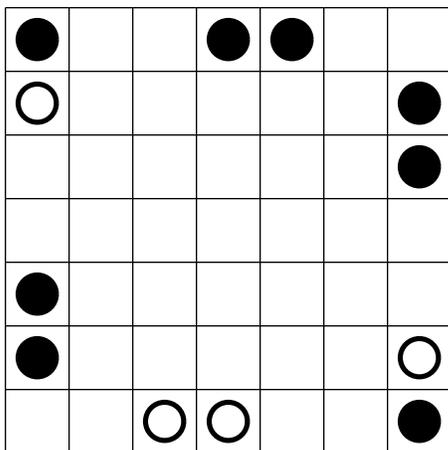
- If you ever completely surround an area of the puzzle with shaded squares, connectivity of the unshaded areas demands that you shade all of the surrounded area. Keep an eye out for the possibility that shading a certain square will force a much-too-big shaded area to be formed; you then know that square cannot be shaded.
- A critical technique for the harder puzzles, particularly those with a large amount of black circles given, is to identify a set of black circles such that every shape has to contain at least one of them. For instance, a puzzle with a bank of the five tetrominoes may have five black circles that are all too far part for any tetromino to contain two of them. If you do identify such a set, look for black circles that are particularly distant from any element of your set and think about what shapes can use them.
- In many cases you can reduce a partially-formed shaded area to being one of a few shapes but not yet know which. Keep an eye out for “naked pairs”, where two different areas have to both be either shape A or shape B. You then know that those two shapes can't appear anywhere else. Naked triples and quadruples are also possible although less common.

# Tetrominoes

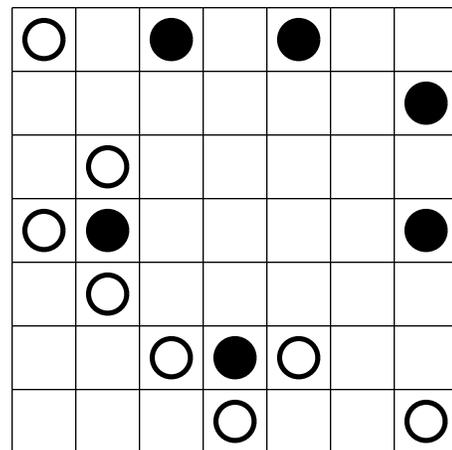
The puzzles in this section are 7 by 7 grids and use the bank shown below, with one copy of each of the five tetrominoes.



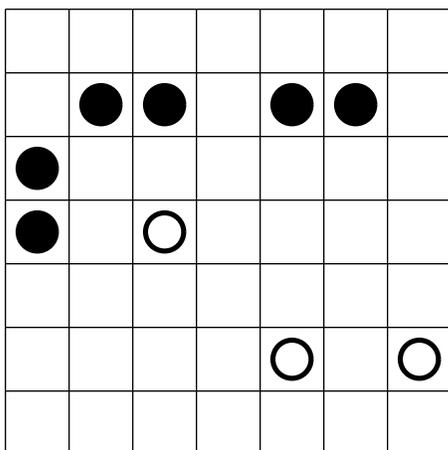
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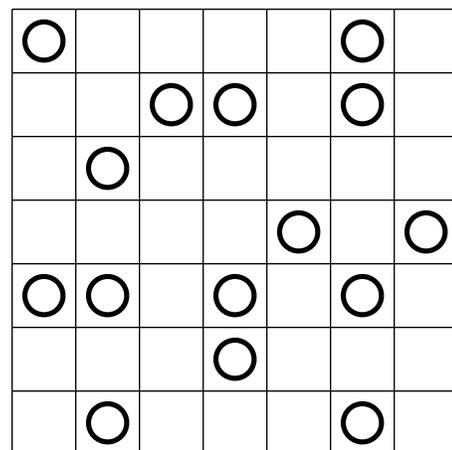
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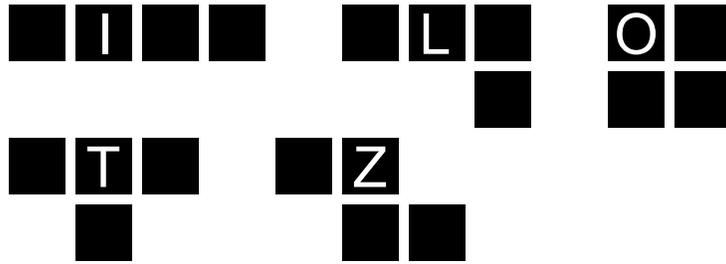


II.3

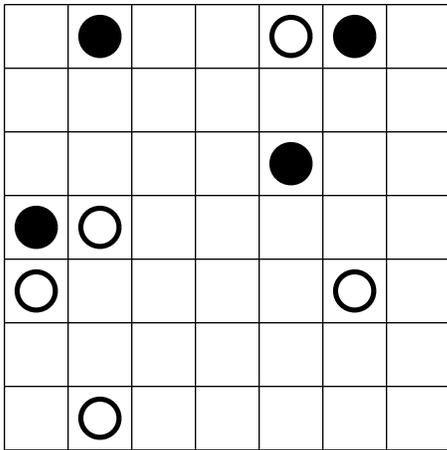


II.4

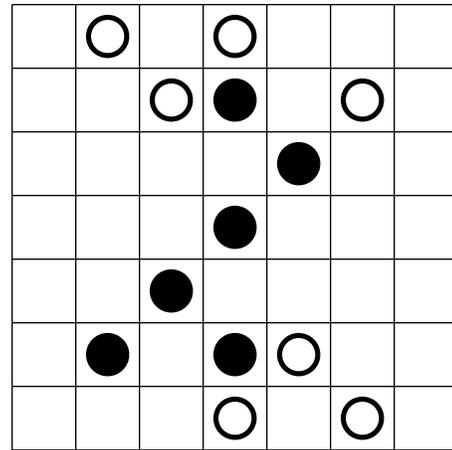




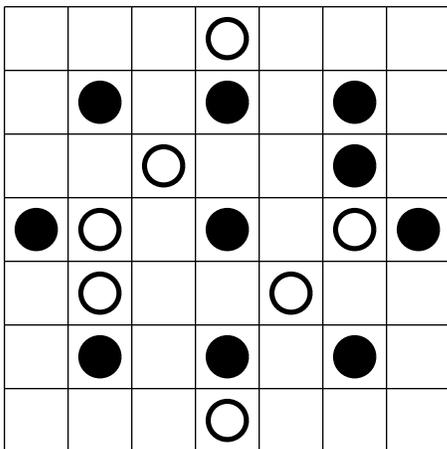
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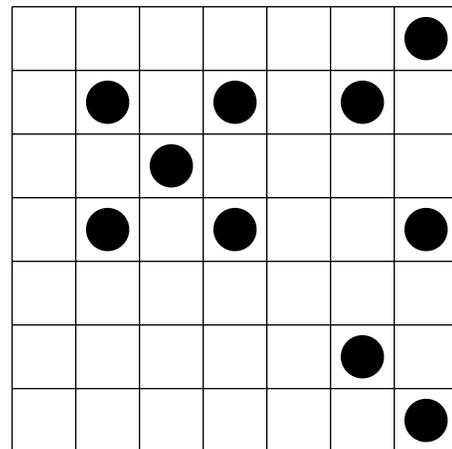
II.6



II.7

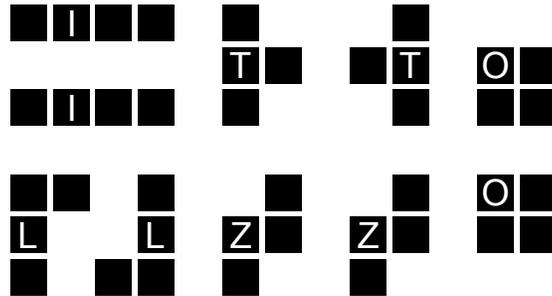


II.8

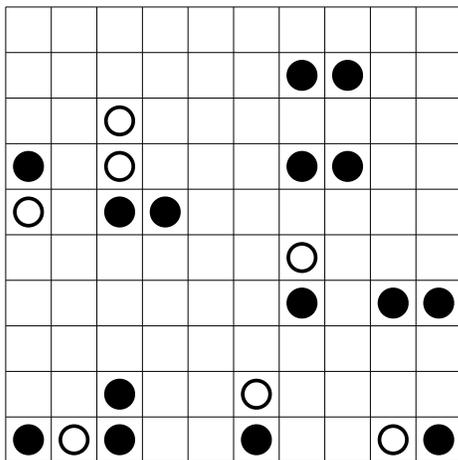


# Double Tetrominoes

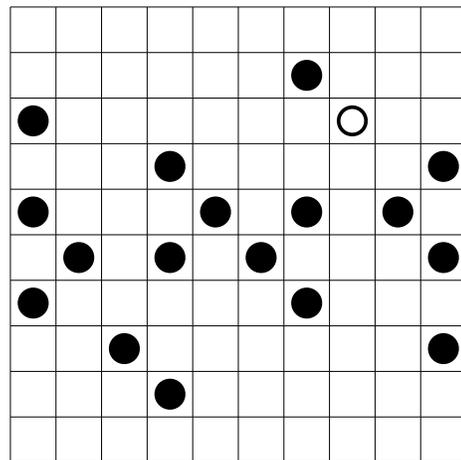
The puzzles in this section are 10 by 10 grids and use the bank shown below, with two copies of each of the five tetrominoes.



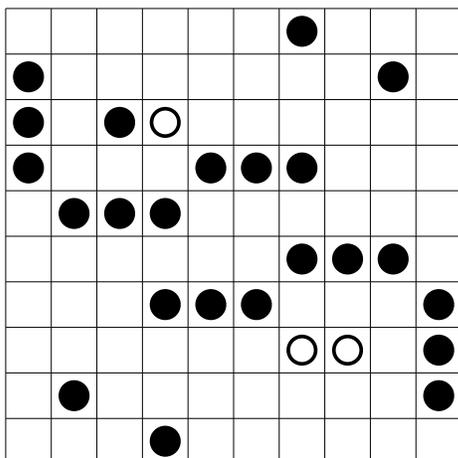
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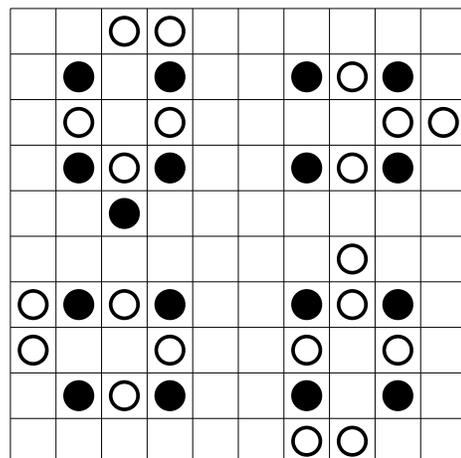
II.10

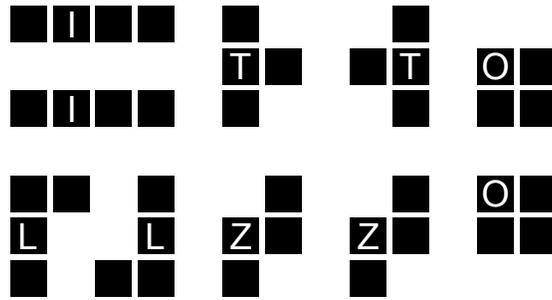


II.11

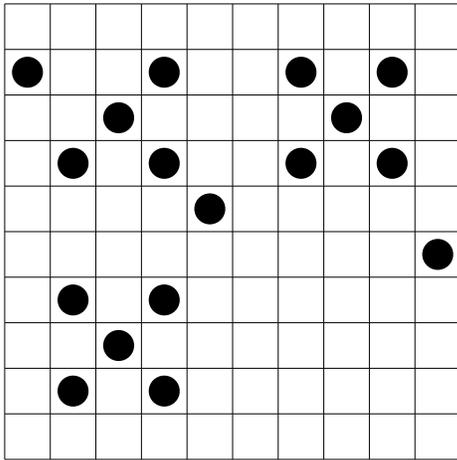


II.12

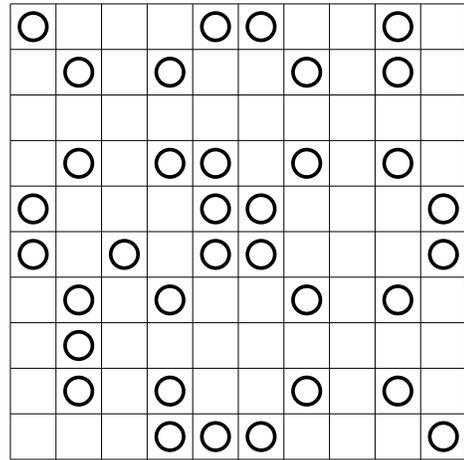




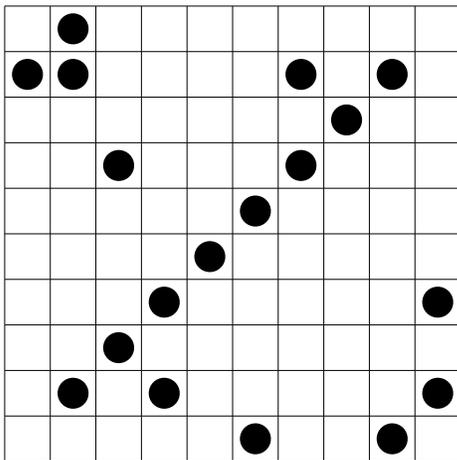
II.13



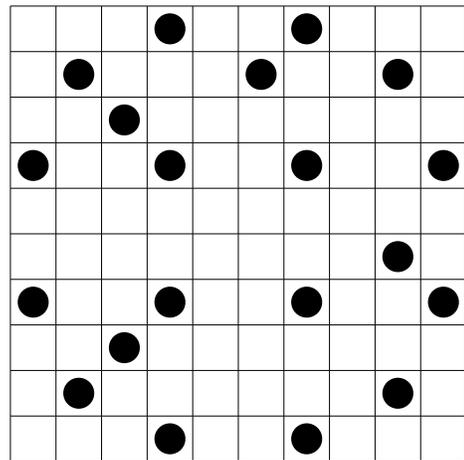
II.14



II.15

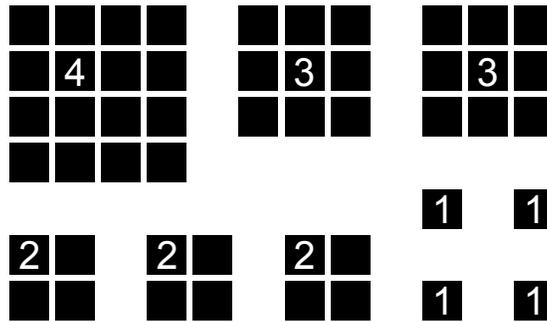


II.16

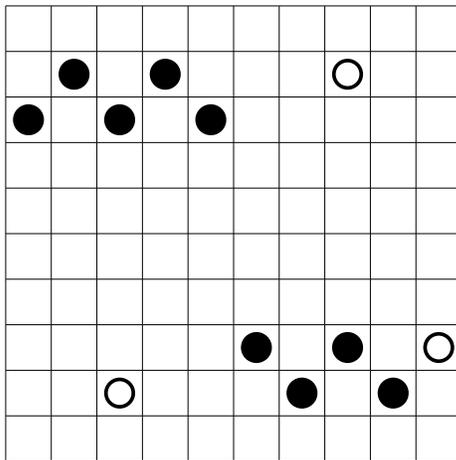


# Battlesquares

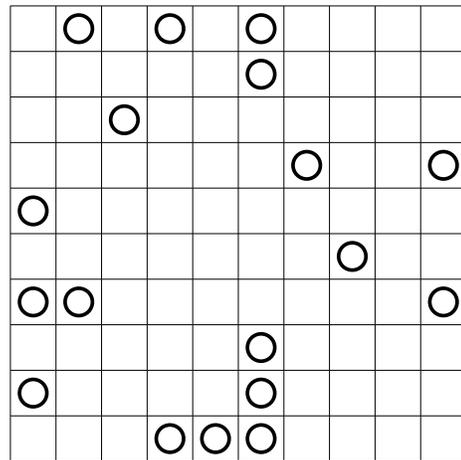
The puzzles in this section are 10 by 10 grids and use the bank shown below, which should remind you of the Battleships type.



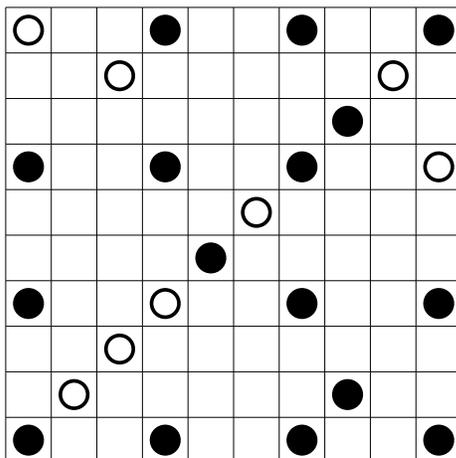
II.17



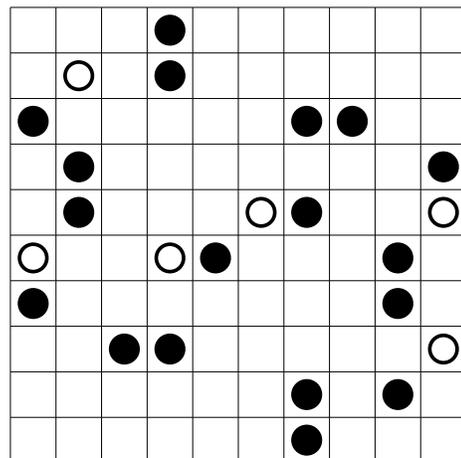
II.18



II.19

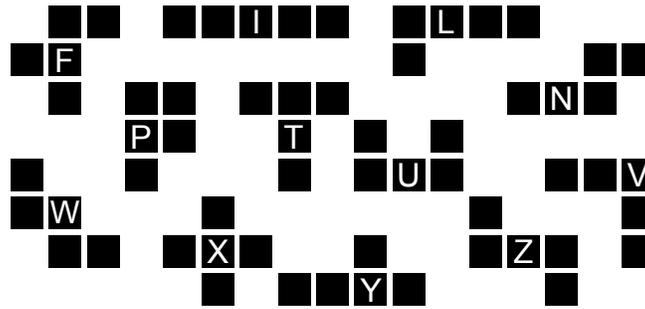


II.20

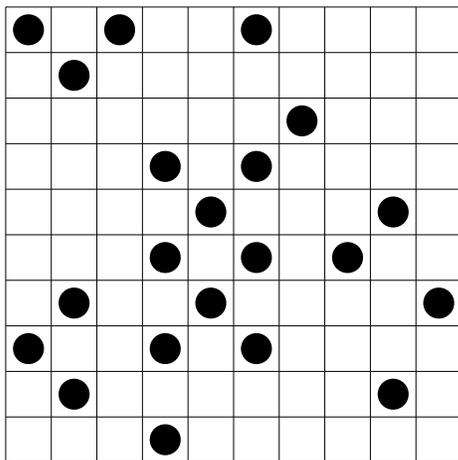


# Partial Pentomines

The puzzles in this section are 10 by 10 grids and have a bank containing eight or nine of the twelve pentominoes. All twelve are shown below. The bank for each puzzle is different and given below the puzzle.

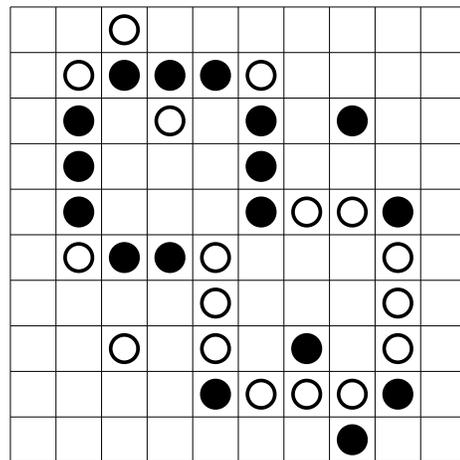


II.21



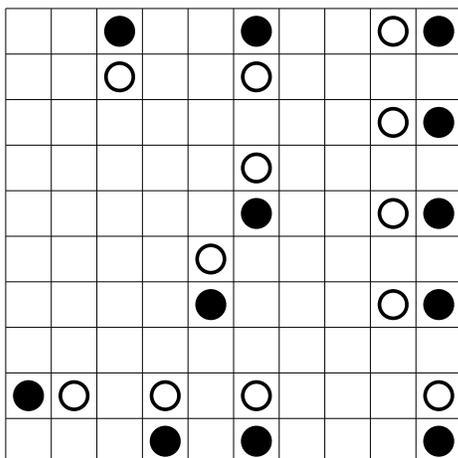
F I L N U V X Y Z

II.22



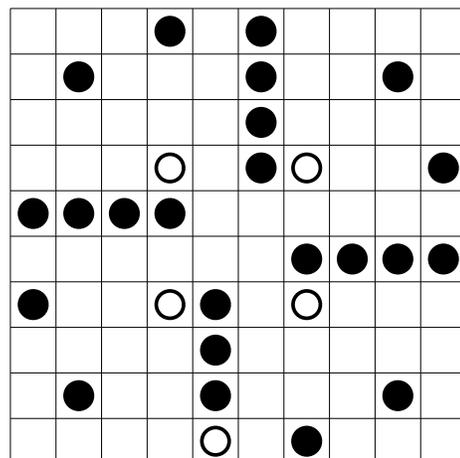
L N P T U V X Y

II.23

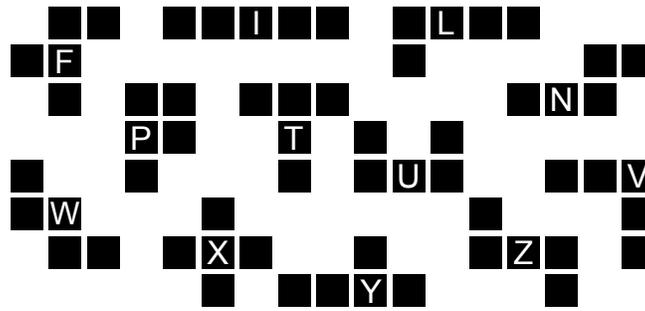


L N P T V W X Y Z

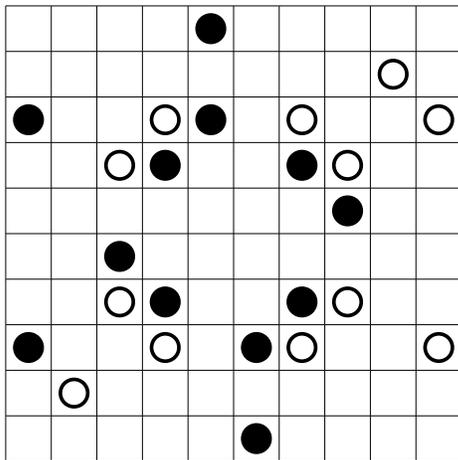
II.24



F I L U W X Y Z

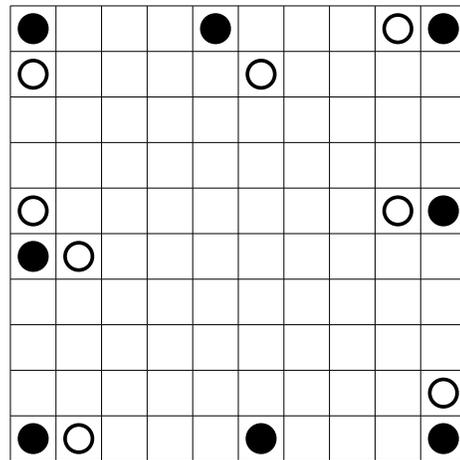


II.25



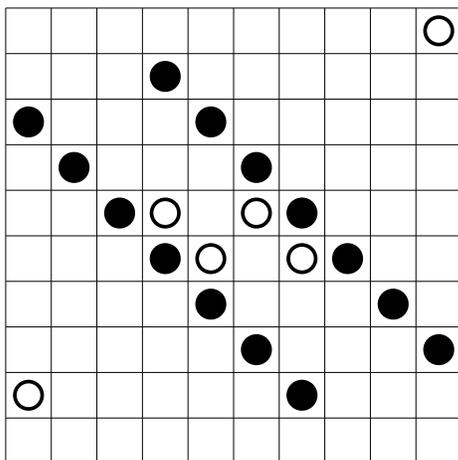
FINTUVWZ

II.26



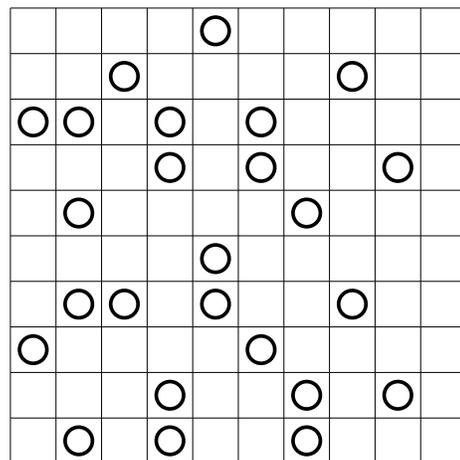
FLNTUVYZ

II.27



ILPTUWXZ

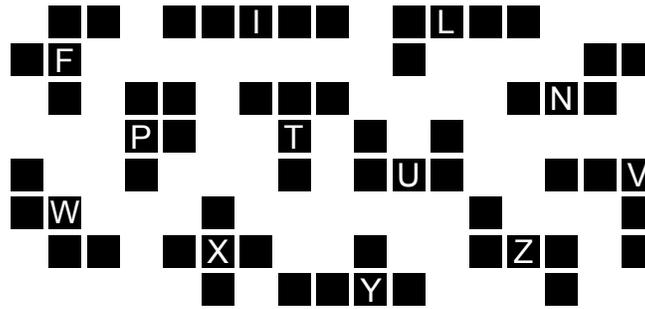
II.28



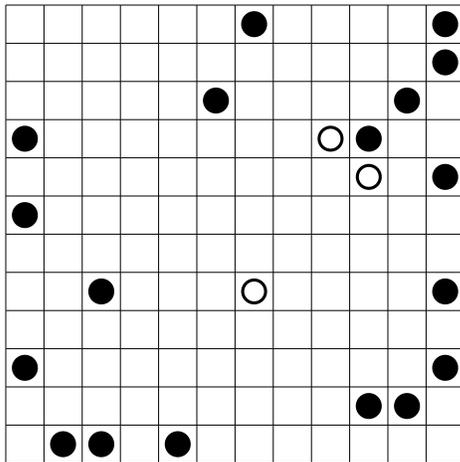
ILNPUWXYZ

# Pentominoes

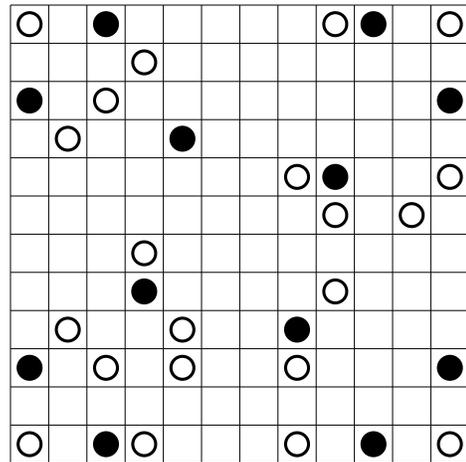
The puzzles in this section are 12 by 12 grids and use the bank shown below, which contains all twelve pentominoes. These will prove quite tricky; good luck!



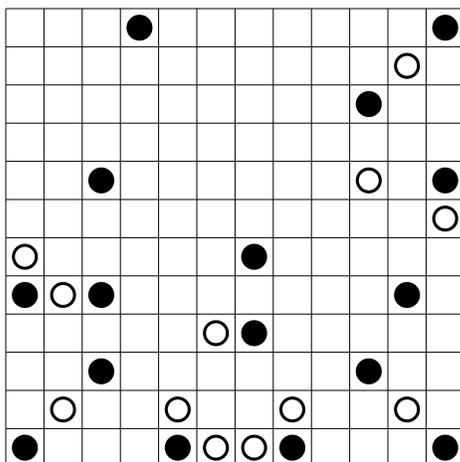
II.29



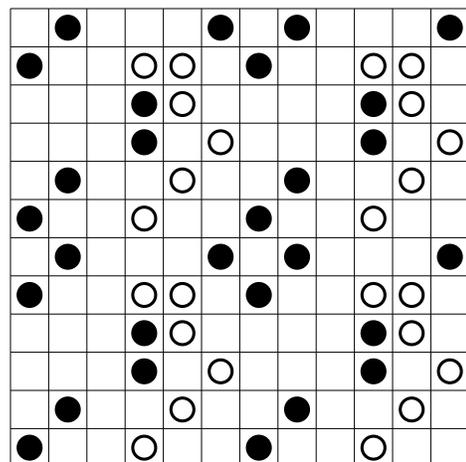
II.30

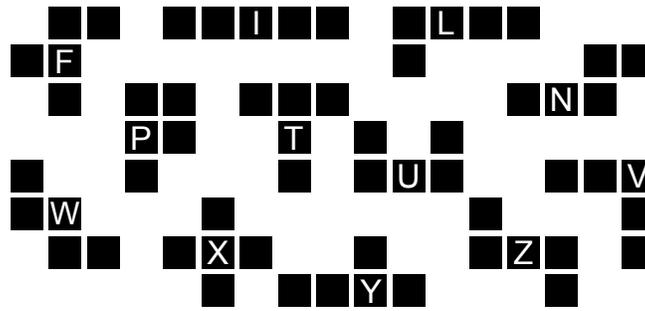


II.31

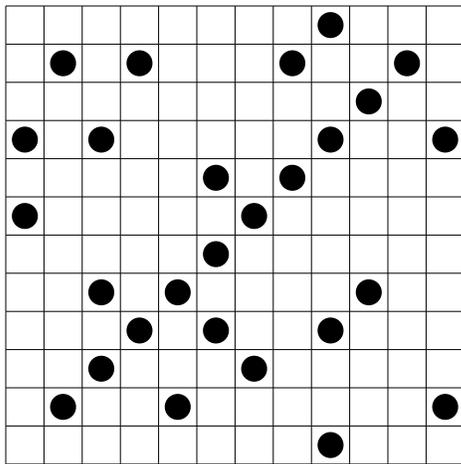


II.32

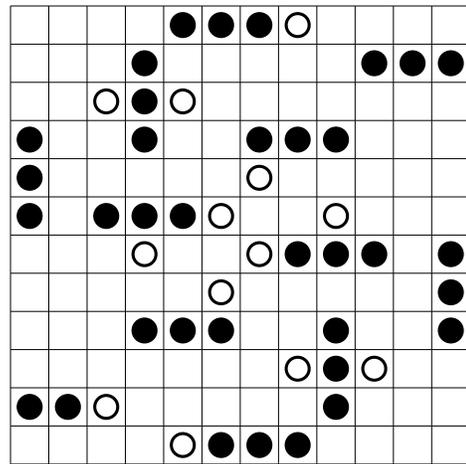




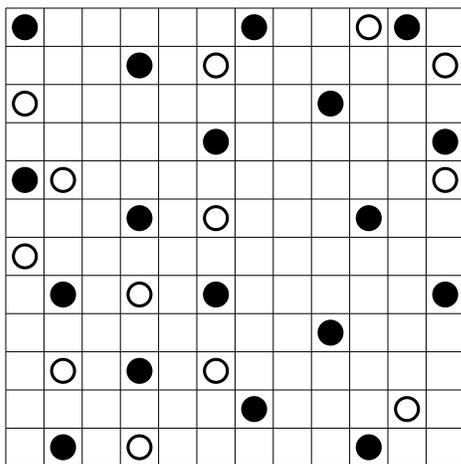
II.33



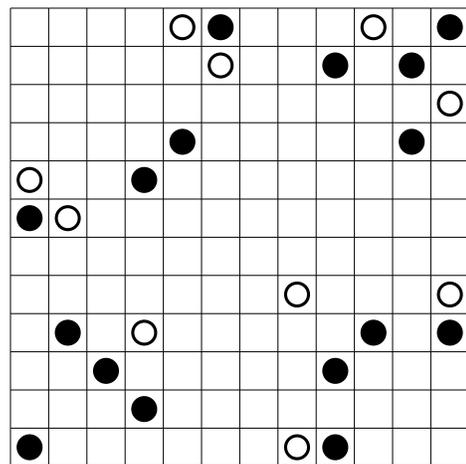
II.34



II.35



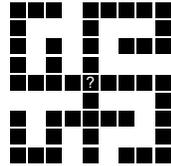
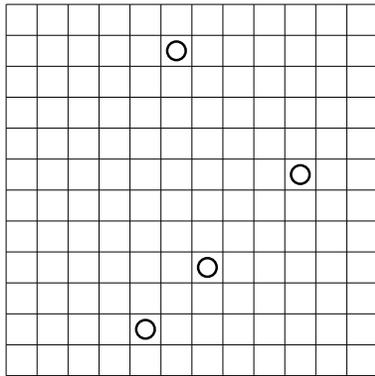
II.36



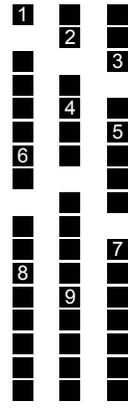
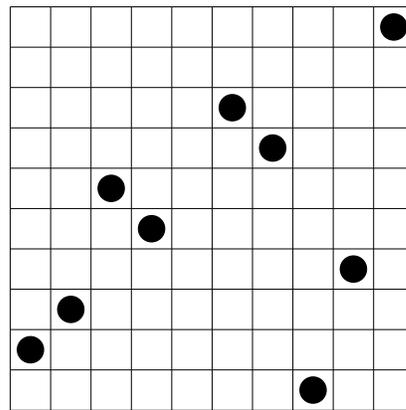
# Irregular

The puzzles in this section each use a different bank. Understanding the properties of the bank should be your first step for solving each of these.

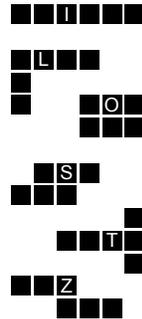
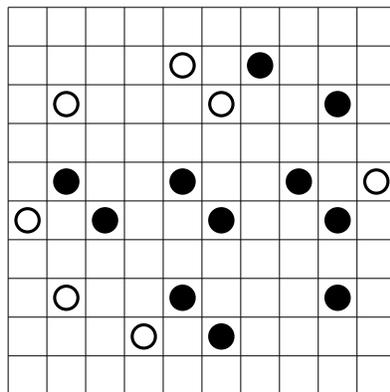
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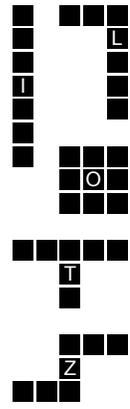
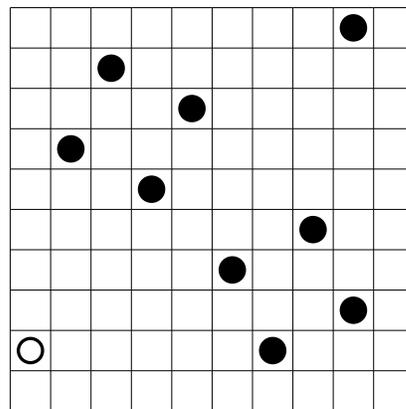
II.38



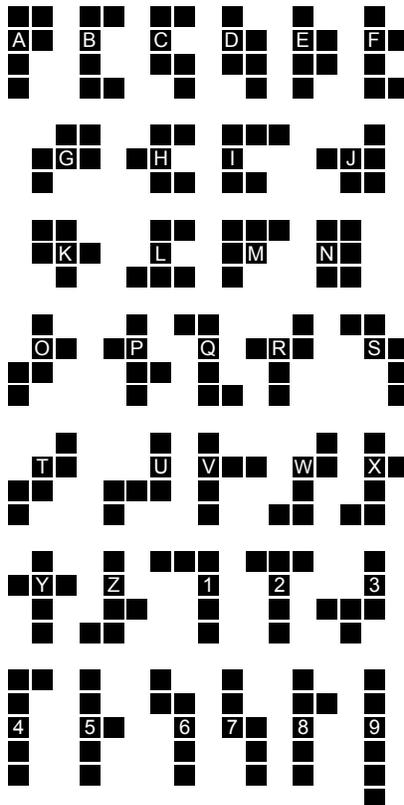
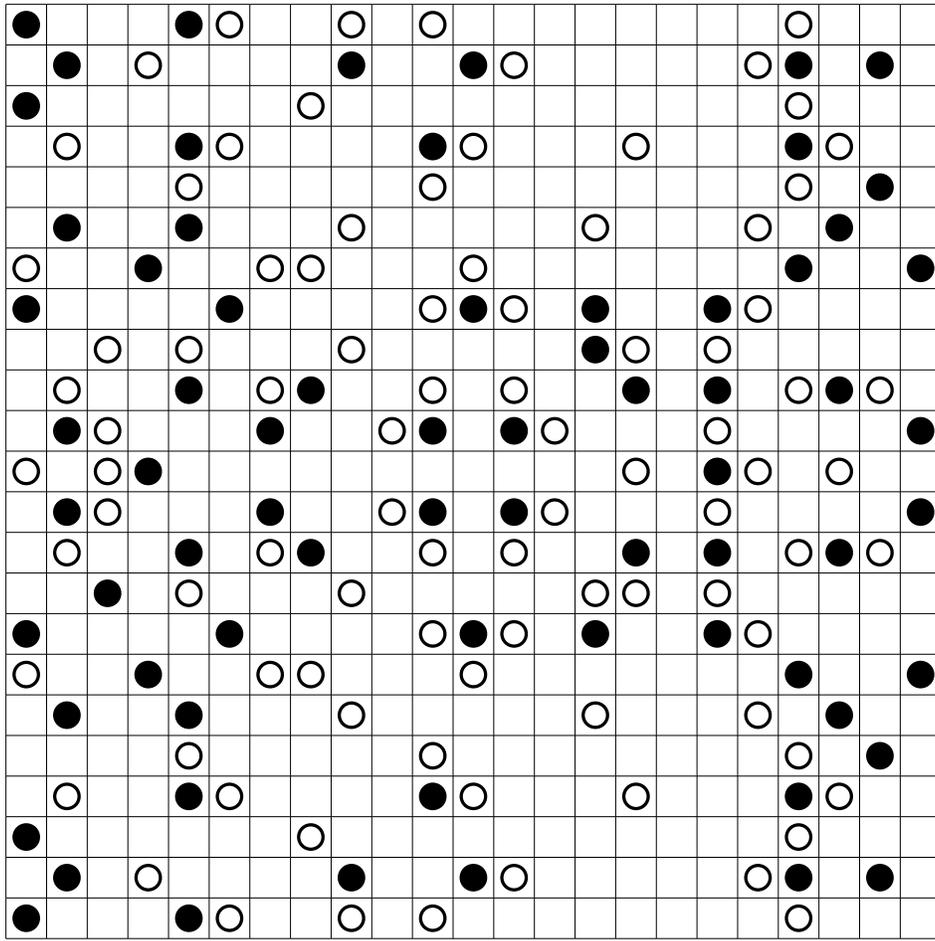
II.39



II.40



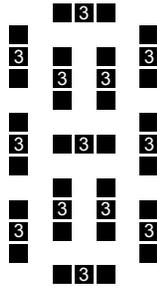
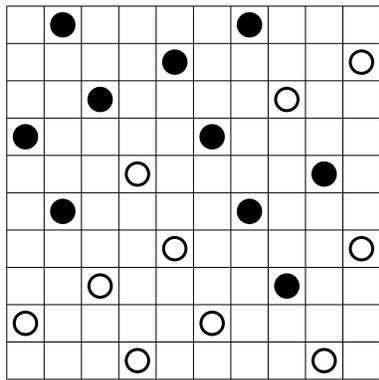
II.41



# Contributed Puzzles

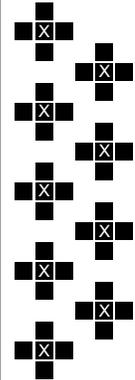
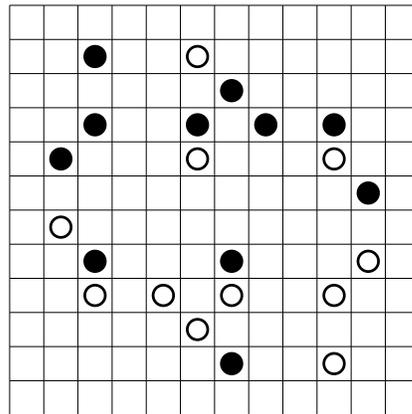
I asked some other puzzle authors whose work I respect if they would like to make some puzzles to be included in this pack. I received four puzzles in total from them, all reaching a pretty high standard of quality. Hints are not provided, but solutions are on the last page.

II.C1



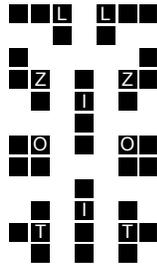
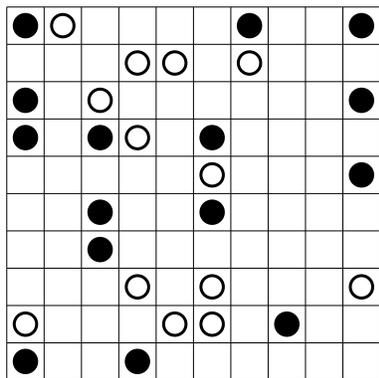
By Tom Collyer (detuned)  
<http://tcollyer.blogspot.com/>

II.C2



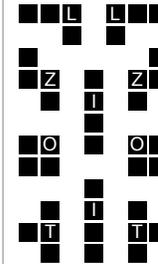
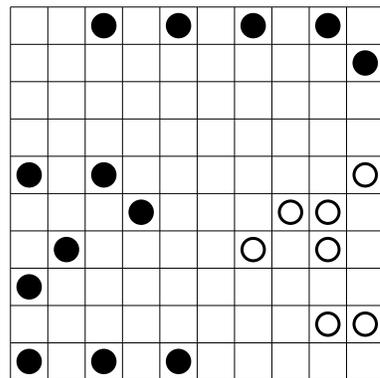
By Serkan Yurekli  
<http://akil-oyunlari.livejournal.com/>

II.C3



By Grant Fikes (mathgrant)  
<http://mathgrant.blogspot.com/>

II.C4



By Grant Fikes (mathgrant)  
<http://mathgrant.blogspot.com/>

# Hints

**II.1:** Remember to avoid black square groups of size greater than four, and remember to avoid forming shapes you've already used.

**II.2:** You should find fairly early that the white squares on the right side get split in the middle and have to go through the left to connect.

**II.3:** Some simple connectivity logic should get you lots of white squares in the top row. When finishing on the bottom, look out for where the O piece can go.

**II.4:** Place the O first, then the I. The T should only have a couple possibilities after that.

**II.5:** Notice here that if squares like R2C1 or R2C2 were black, it would create too large a black square group. Then in the top right, there's just one way to avoid placing another L.

**II.6:** The T shape is the key to start. Figure out what region of the puzzle it has to be in, then make sure to avoid making a second copy anywhere else.

**II.7:** There are almost too many black squares for a piece bank of this size. The O can only use 1 of them, but the rest need to use at least 2, and one needs to use 3.

**II.8:** What shape does R3C3 have to be a part of? Why can't R2C5 or R3C7 be black? Figuring all of this out should get you a start in the top right.

**II.9:** Work from the bottom up, making sure to avoid connected groups larger than four and any shapes you've already made both of.

**II.10:** A blank square sealed in by black circles has to be shaded. Using this on the left and right edge gets you both copies of one of the shapes.

**II.11:** How many pieces are there that can have three shaded squares in a line? How many consecutive groups of three black circles are you given?

**II.12:** Not counting R4C3, there are 16 black circles and 10 pieces, so six pieces need to use two black circles. Four of them can use two black circles within the same quadrant. The other two have to bridge two quadrants and must be the two I's.

**II.13:** What shape do the black circles on R3C8 and R8C3 have to be? What deductions can you make in the top left as a result?

**II.14:** There are only four places where an O or an S can fit. The other six pieces have to be distributed among the corners; only two corners can fit two pieces.

**II.15:** There are just barely enough T's and O's for the top left and the diagonal to work out. Of course, this means a T and O can't be anywhere else.

**II.16:** There are 12 black circles in the intersection of rows 1,4,7,10 and columns 1,4,7,10. Only the I's can use two, so every other piece has to use one of these circles. This should tell you something about the pieces that contain R2C2, R2C9, R9C2, R9C9.

- II.17:** What goes wrong if certain black circles on the top are not 1s? Next, what has to happen on the bottom to avoid having too many 1s?
- II.18:** Go from largest pieces to smallest. You should have to place the 2s before knowing the exact locations of the 3s.
- II.19:** Of the 13 black circles in the intersection of rows 1,4,7,10 and columns 1,4,7,10, the 4 piece uses four of them and the other nine pieces each use one.
- II.20:** You want to place the 1s first here. Remember only six pieces can contain adjacent black circles.
- II.21:** Remember that squares sealed in by black circles must be shaded. The fact there is no P or T in the bank means you should be wary of forming T-tetrominoes with shaded squares.
- II.22:** Work in the top left until you find the T. Later, it helps to realize the X and U have particularly few options.
- II.23:** There is no I in this puzzle. You should also find the L and Y before the halfway point, so be sure to avoid any lines of four shaded squares from then on.
- II.24:** Place the I and X first. There are only a couple places left for the Z; think about the row of black circles on the left to eliminate one of them.
- II.25:** Squeezing four pieces into the center while keeping connectedness is tricky. Since there is no L, the four pieces have to be F,U,W,Z.
- II.26:** There's no I in this puzzle. Try to avoid boxing in the corner black circles, since this leaves few possibilities and you might make the same shape twice as a result.
- II.27:** The I and the T can't use any of the given circles. That means the given circles form the other six pieces. The W and Z can use three circles, so the other pieces are forced to use two, which is a major constraint on them.
- II.28:** Place the X and I first. After that, think about what regions of the puzzle must have a piece to be able to fit everything into the grid. The left center in particular can fit fewer pieces than appearances suggest.
- II.29:** Start in the top right and move clockwise. Your first two pieces should be L and Y, so keep avoiding lines of four unless they might be the I.
- II.30:** Each piece uses exactly one black circle. Few of them can be the X, which is useful in the middle of the solve.
- II.31:** Although you can't solve the bottom left immediately, you can find a piece that must appear in it. Also, boxing in corner circles leaves them few options, so you can't do it to too many of them.
- II.32:** Find 12 black circles that all have to correspond to different pieces. Then figure out which pieces are hard to fit anywhere in the grid. The L, Y, and U in particular have few options.
- II.33:** Can the two halves of the puzzle be connected through the top right? Also, a lot of logic in this puzzle is driven by avoiding pieces you've already made.
- II.34:** The W is the only piece that doesn't have three squares in a row. Later,

the X and F have few options, and there are a few naked triples to be found.

**II.35:** Only six pieces are shaped in a way that can use two black circles, and there are 18 here. There are few ways to have the I or V use two given circles.

**II.36:** Which shape does the bottom left circle have to be? Knowing that, what does the top right have to be? In general, work by finding the general position of shapes, even if you can't place them directly, and avoid forming them elsewhere.

**II.37:** No matter how the piece is rotated or reflected, it always has a plus shape. Use this to find its center first. Don't put it too close to the edge to keep things connected.

**II.38:** Start with the largest piece and go in descending order. You need to do the 4 and 5 at the same time.

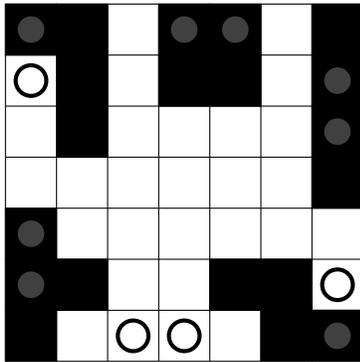
**II.39:** The piece bank is not so much a variant of tetrominoes as it is all the ways to attach two line triominoes together. When you know a piece uses two black circles, think about how to place a line triomino on each.

**II.40:** The systems of four black circles in each corner have to each be covered by three different pieces to avoid connectivity issues.

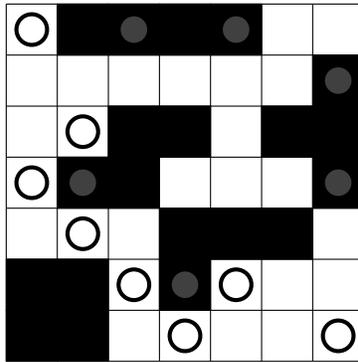
**II.41:** The center is the starting point. Keep careful track of which pieces you've already used; this puzzle is almost entirely driven by avoiding the shapes you've already made.

Solutions

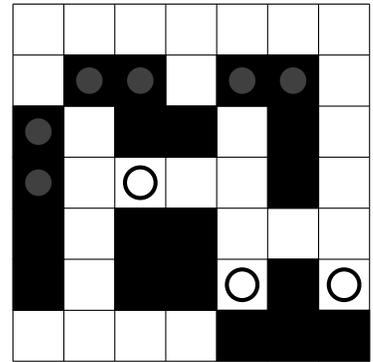
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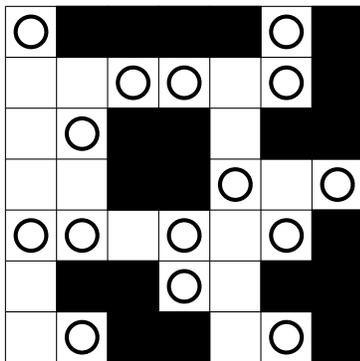
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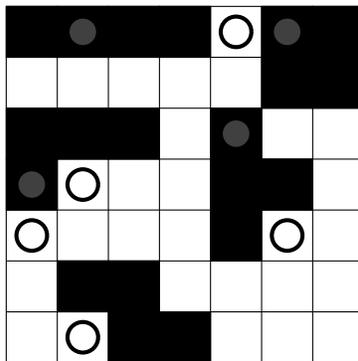
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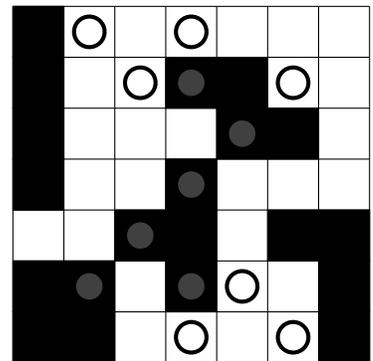
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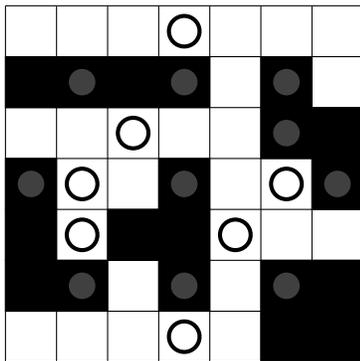
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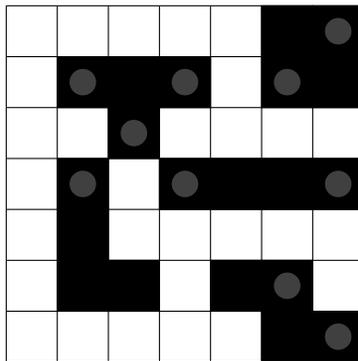
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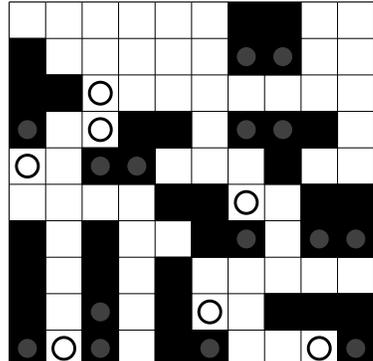
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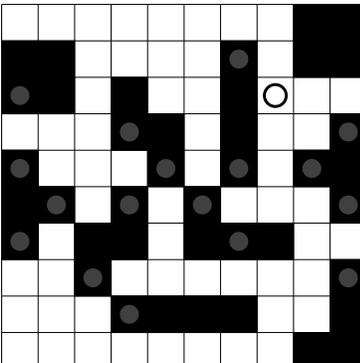
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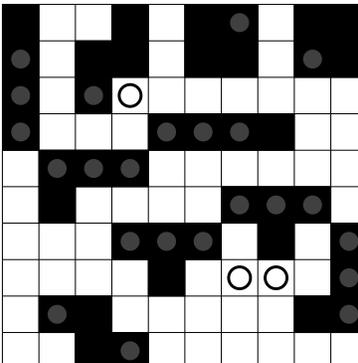
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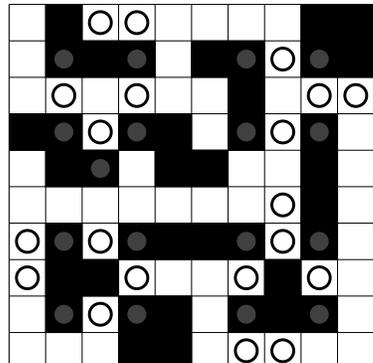
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II.11



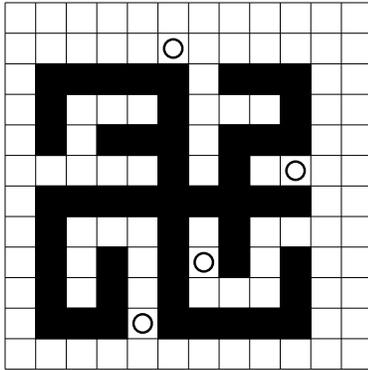
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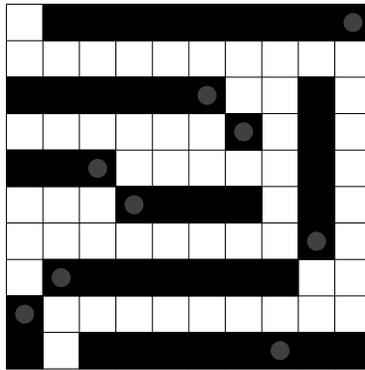




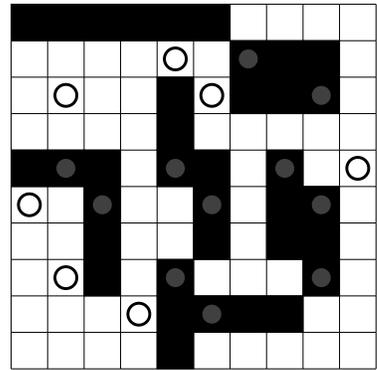
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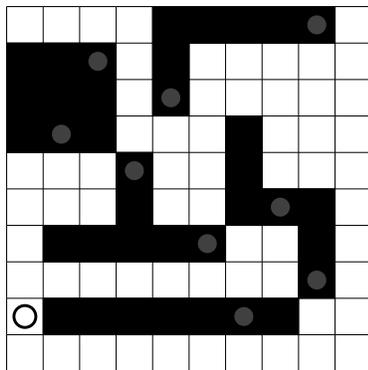
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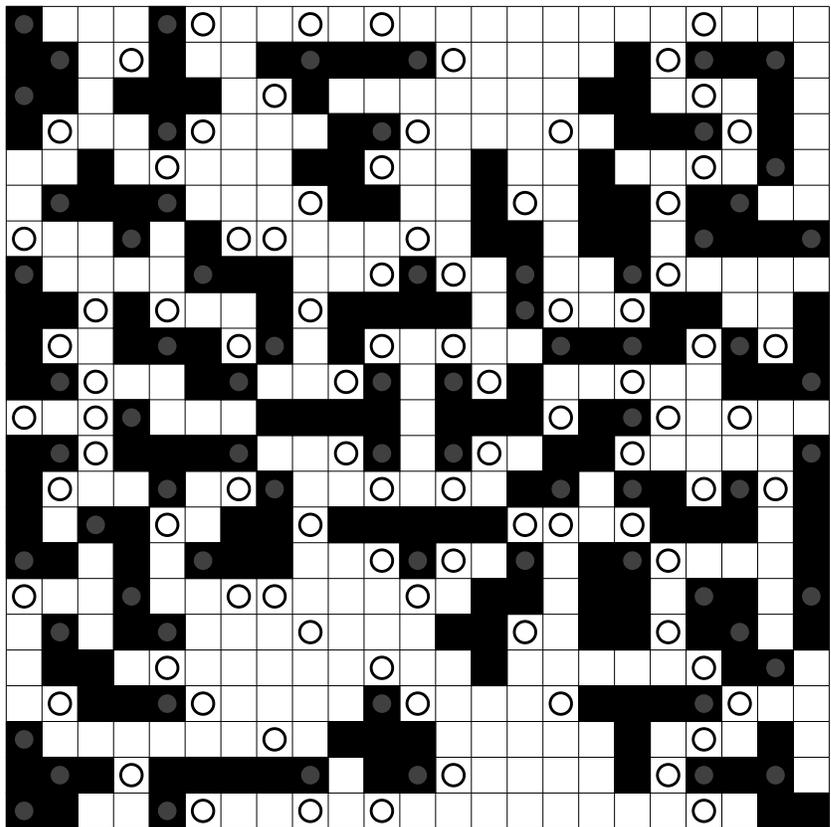
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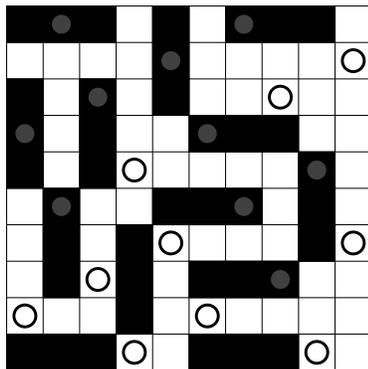
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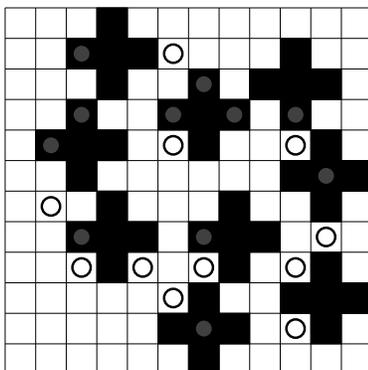
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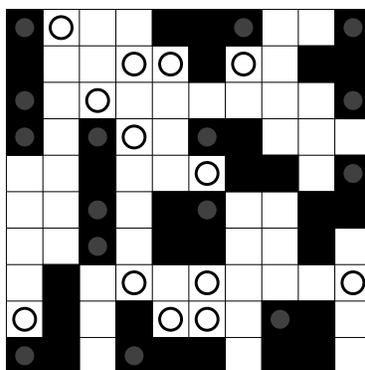
II.C1



II.C2



II.C3



II.C4

