

Donimoes: New Games and Puzzles

When I tell people that I like domino games, they are often surprised to hear that you can do more than just match the numbers. If you look in a book of games, often with Mr. Hoyle's name on the cover, you might find the basic game and maybe All Fives. If you're lucky, you'll find Chickenfoot and Mexican Train.

This book is a collection of domino games and puzzles that will broaden your horizons beyond a chain of dominoes with matching numbers. You'll find new games and puzzles that I designed, as well as some of my favourite domino games and puzzles by other designers:

- **Unmatched Donimoes** is a puzzle I designed where you have to slide all the dominoes into a rectangular shape, without sliding any matching numbers next to each other.
- **Capturing Donimoes** is a puzzle I designed where you have to collect all the dominoes by sliding matching numbers next to each other.
- **Tetradominoes** is a game I designed for one to four players where you play matching dominoes in a grid, then try to play the tetromino shapes on top. (1-4 players, double-six dominoes, 7 cardboard tetrominoes, and some beads, buttons, or coins)
- **Domino Finder** is a memory game I designed where you have to find the treasure domino without falling in a trap. (2-4 players, double-six dominoes, pawns, and two dice)
- **Mountains and Valleys** is a solitaire game by Sid Sackson where you have to lay out a map that you can hike on. I adapted it from paper, pencil, and dice to use dominoes.
- **Fujisan** is a solitaire game by James Droscha where you help four Shinto priests climb to the peak of Mount Fuji. I found 20 layouts that are much more challenging than usual. (1 player, double-six dominoes, and four pawns)
- **Cobra Paw** is a quick-reaction game by Derek Weston. (2-4 players, double-six dominoes, and two dice)
- **All Fives** is a traditional dominoes game, where you score points by making the ends add up to a multiple of five. (2-4 players, double-six dominoes)
- **Dominoa** is the classic domino puzzle by O.S. Adler where you have to fit the set of dominoes onto a grid of numbers.

Unmatched Donimoes

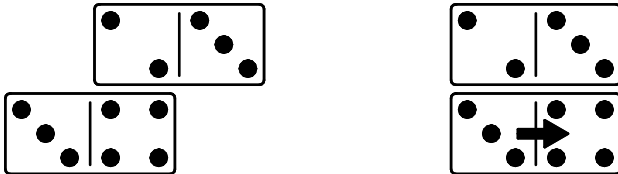
A puzzle I designed that's the opposite of traditional dominoes: matches are forbidden.

Goal

The goal is to slide all the dominoes into a rectangle, without sliding any matching numbers next to each other.

Moves

Move a domino one space along its long axis so that none of its numbers match an adjacent number on a neighbouring domino. In this example, the lower domino can move to the right, because the three doesn't match the two, and the four doesn't match the 3. You couldn't move it another space to the right, because then the threes would be right next to each other.



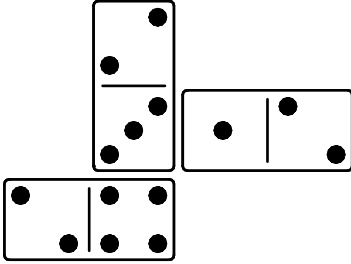
Stay Connected

All the dominoes in the puzzle have to be connected in one solid group, diagonal connections don't count. When you move a domino, it can be disconnected during the move, as long as it is connected at the start and the end of the move. Remember that it can only move one space at a time, though.

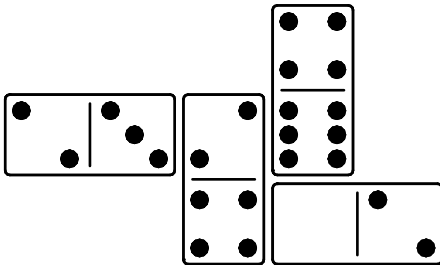
Problems

Here are the starting positions for several Unmatched Donimoes problems. The solutions are listed at the end.

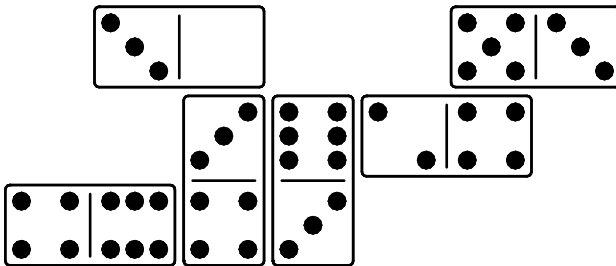
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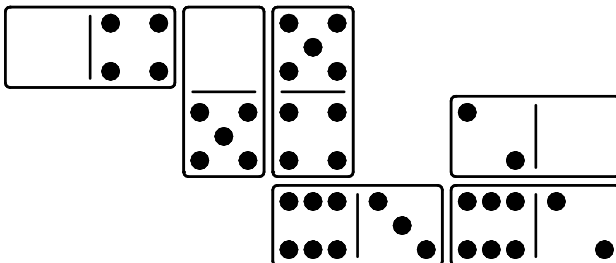
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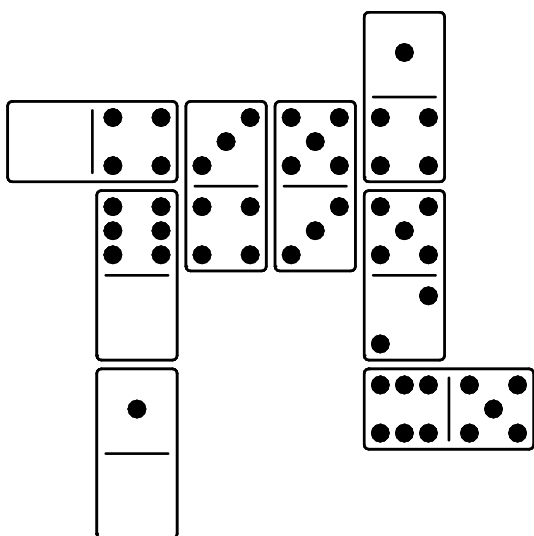
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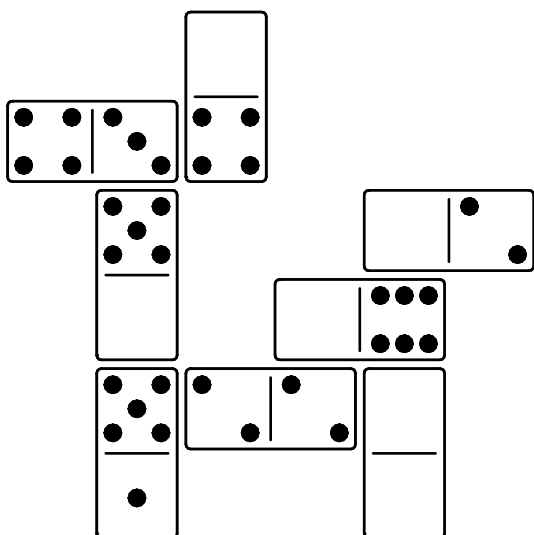
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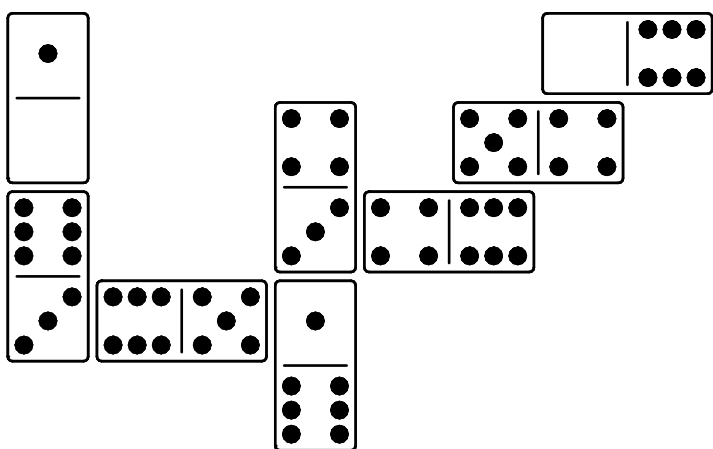
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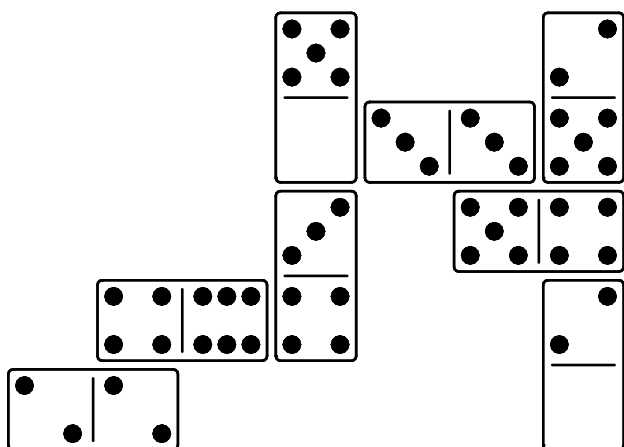
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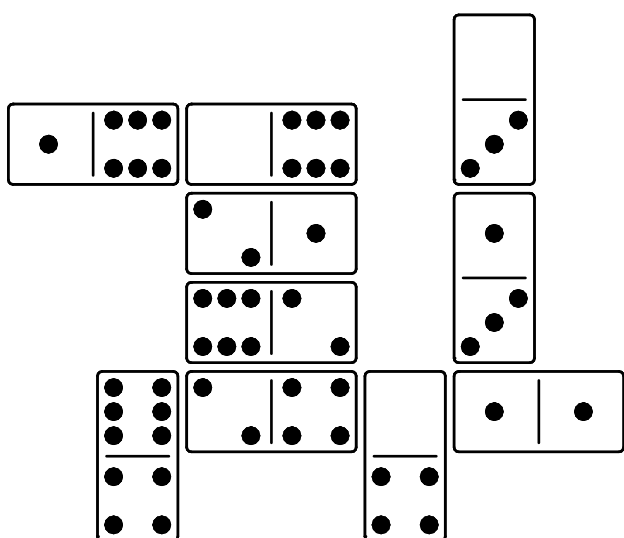
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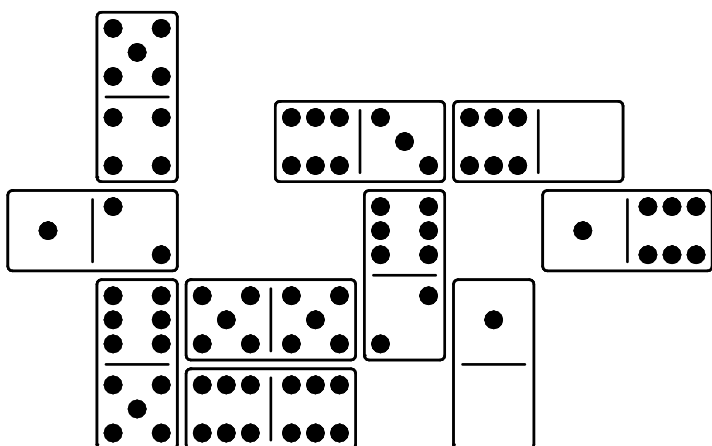
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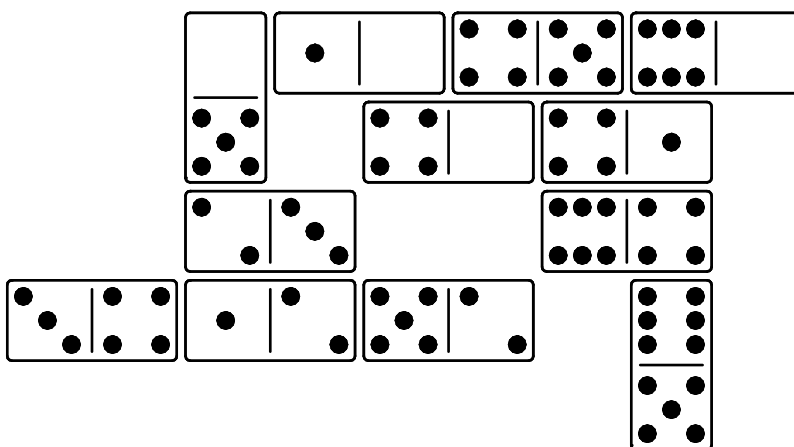
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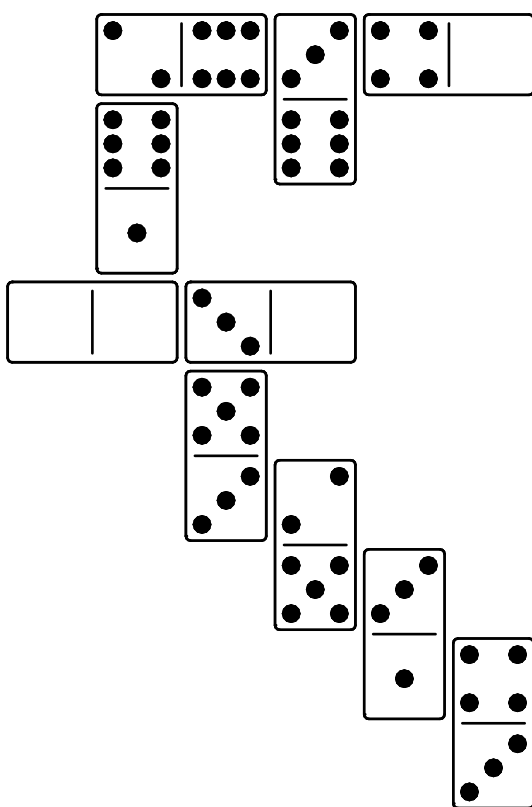
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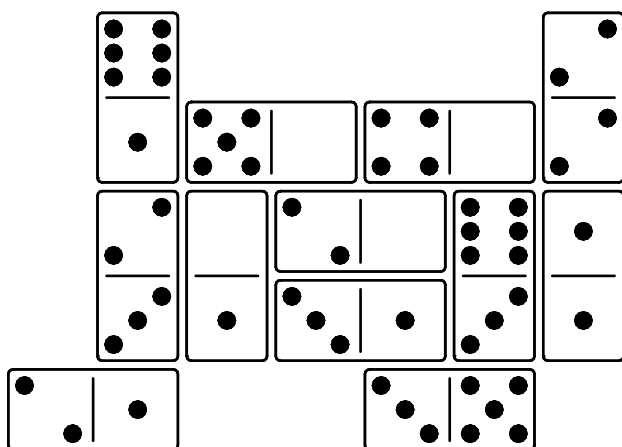
Problem 11



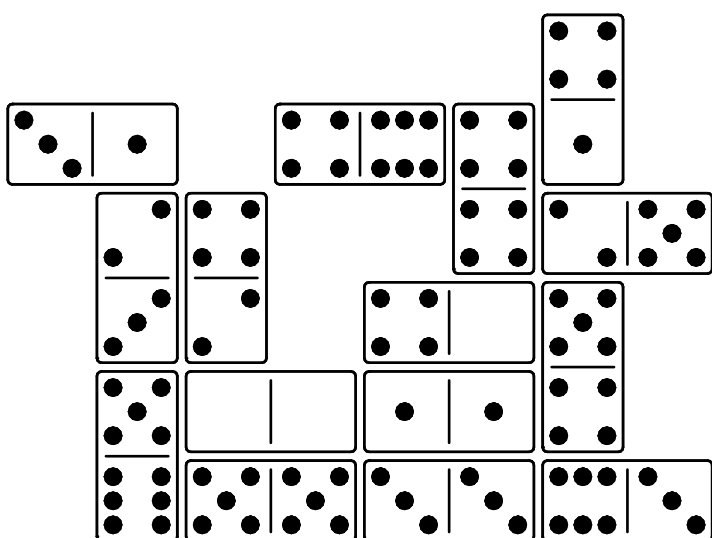
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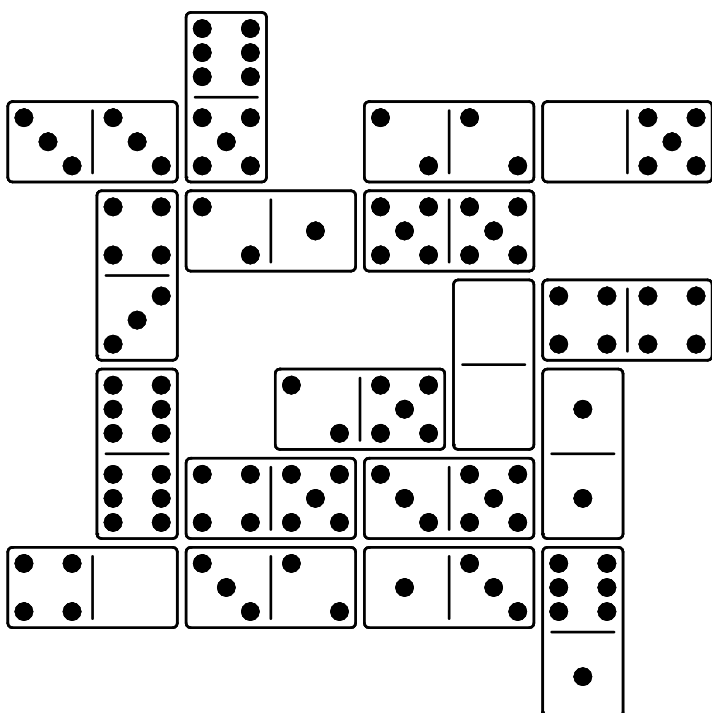
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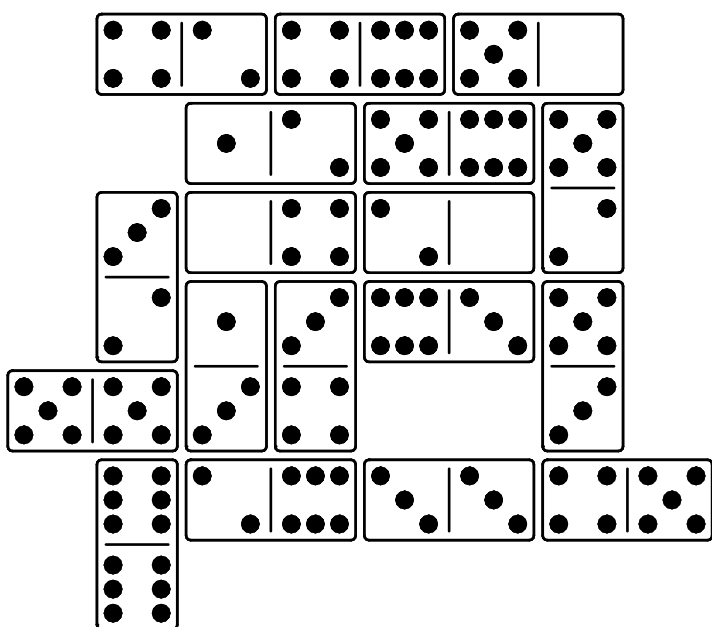
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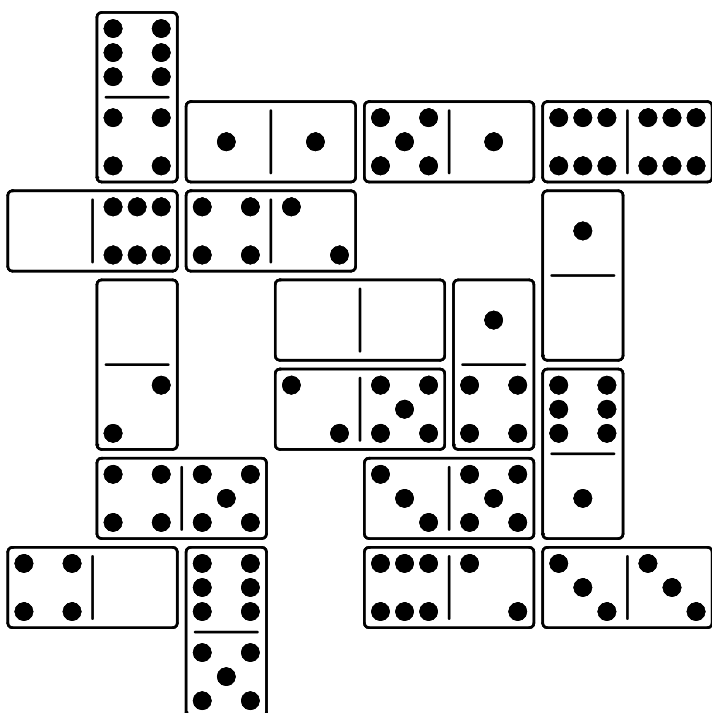
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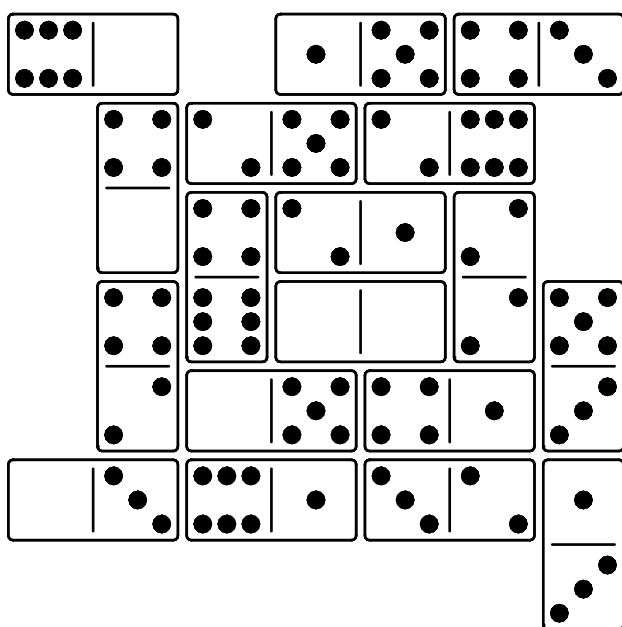
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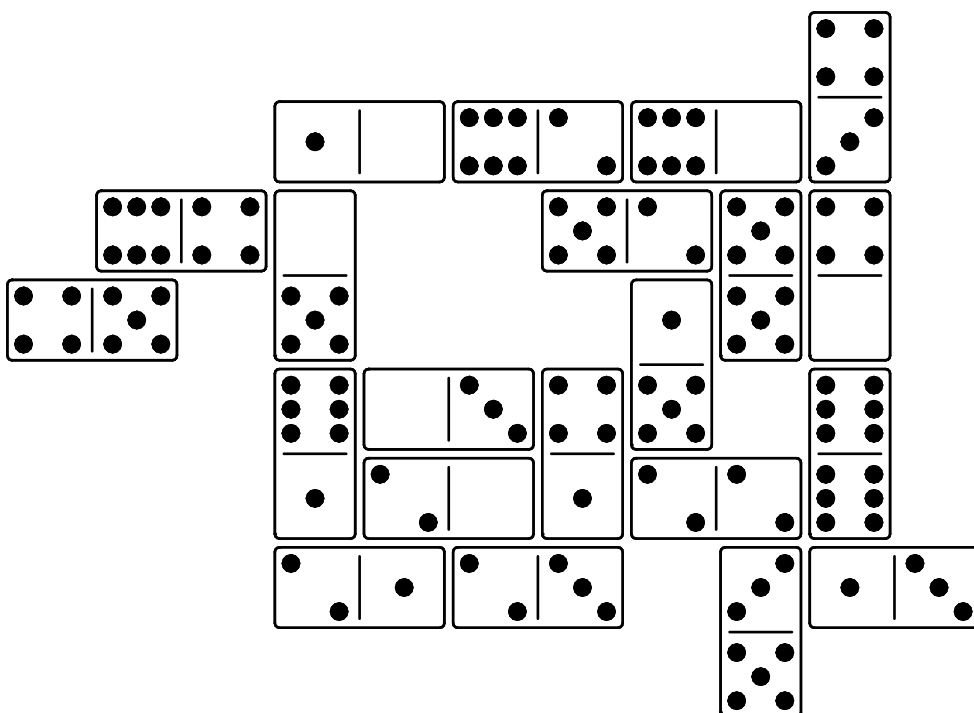
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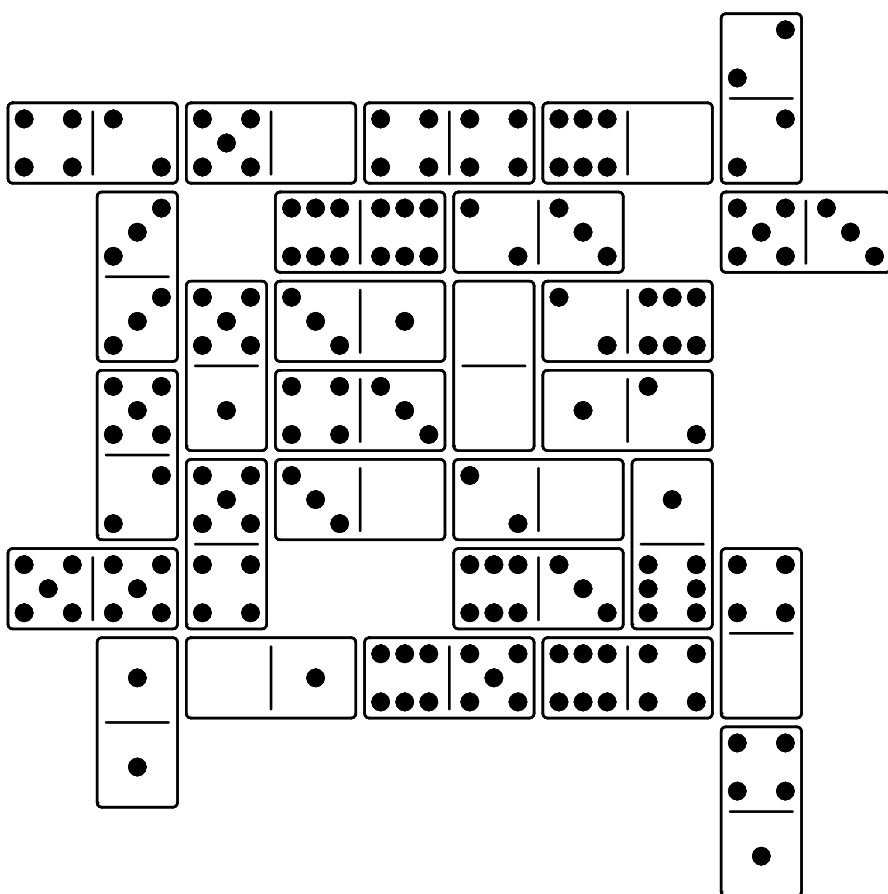
Problem 18



Problem 19



Problem 20



Capturing Donimoes

A puzzle I designed to feel like a safari in heavy traffic.

Goal

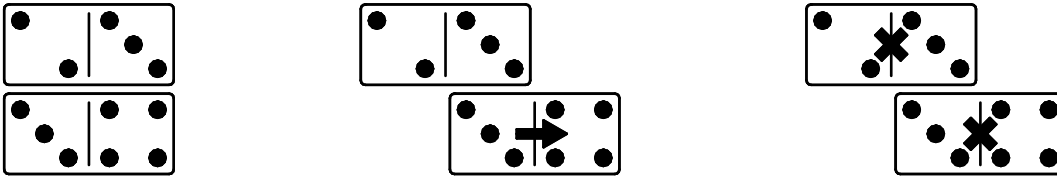
The goal is to collect all the dominoes by sliding matching numbers next to each other.

Moves

There are only two ways a domino can move: matching and adding.

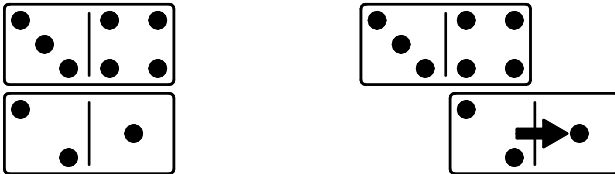
Matching

Move a domino one space along its long axis so that it ends up with at least one of its numbers matching an adjacent number on a neighbouring domino. Then collect the domino you moved and any dominoes that match it, by removing them from the pattern. In this example, the threes match, so you collect both dominoes: solution found!

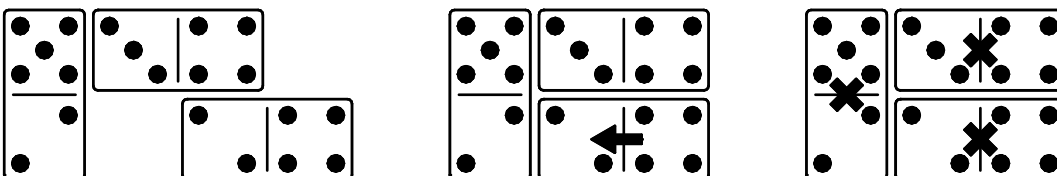
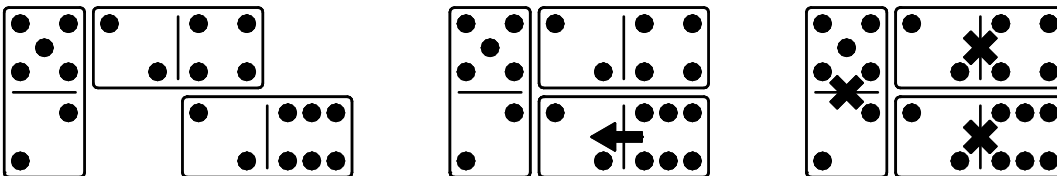


Adding

Move a domino one space along its long axis so that it ends up with at least one of its numbers next to an adjacent number that adds up to six. With an adding move, no dominoes are removed. In this example, the two adds up with the four above it to make six.



Sometimes, you can collect more than two dominoes at once. In the first example, the two matches twos on both of the other dominoes, and you collect all three dominoes. In the second example, the two matches the two to the left, and the four matches the four above it. You collect all three dominoes.



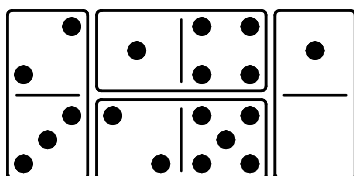
Stay Connected

All the dominoes must stay in one connected group, you can't split the group after moving or after removing the matching dominoes.

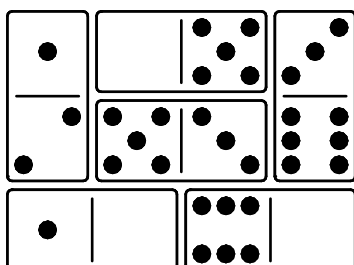
Problems

Here are the starting positions for several Capturing Donimoes problems. The solutions are listed at the end.

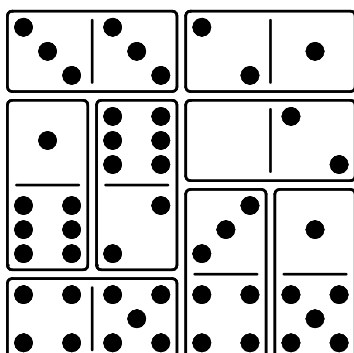
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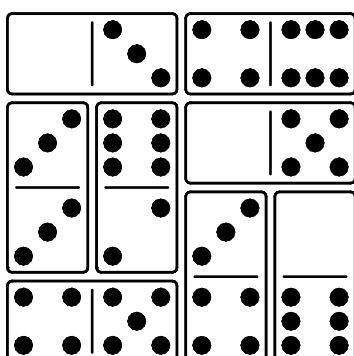
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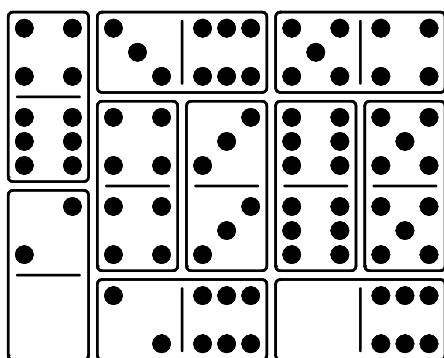
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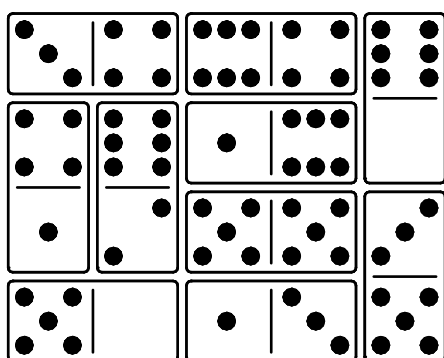
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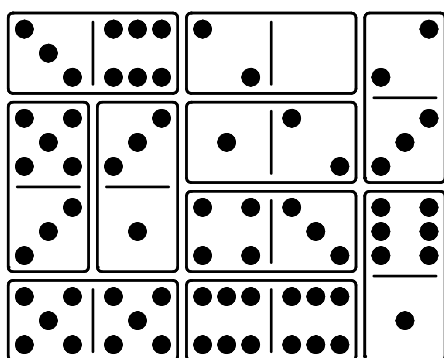
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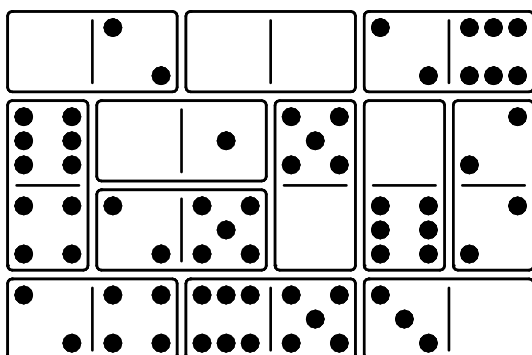
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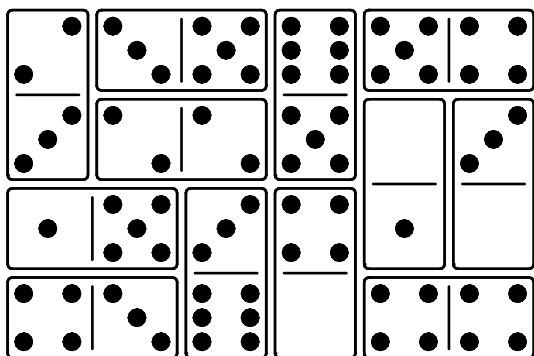
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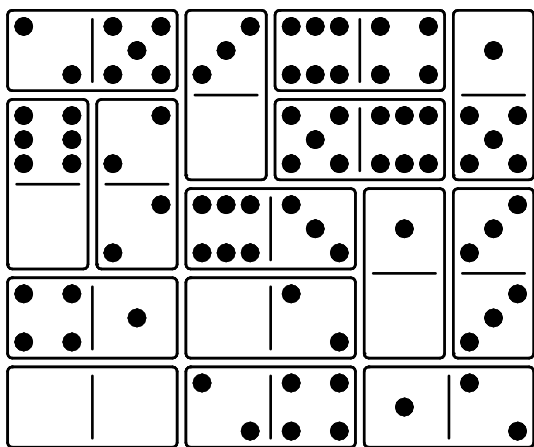
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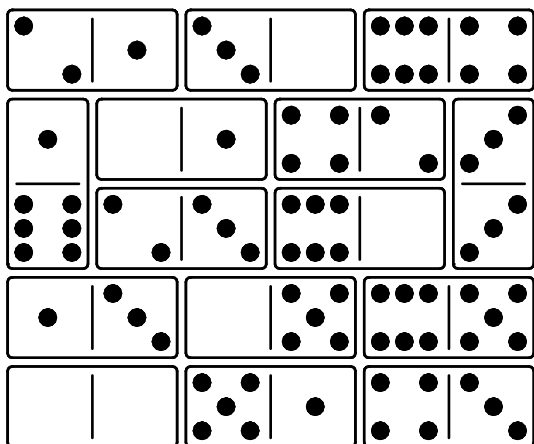
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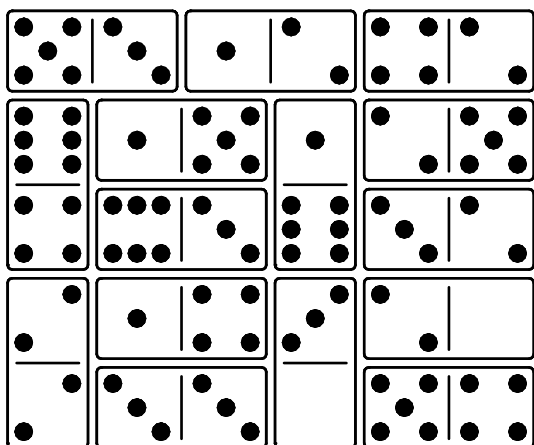
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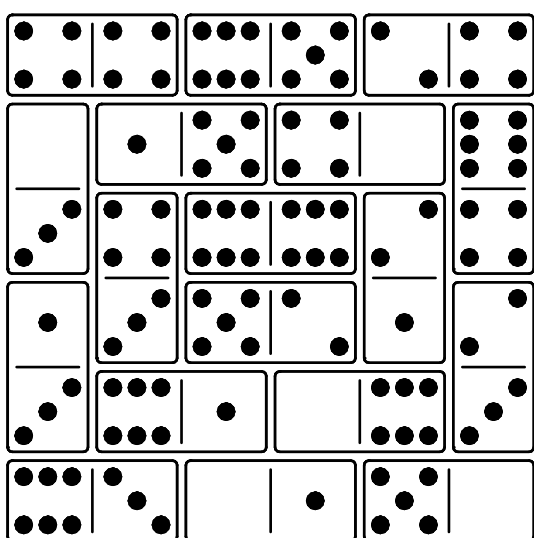
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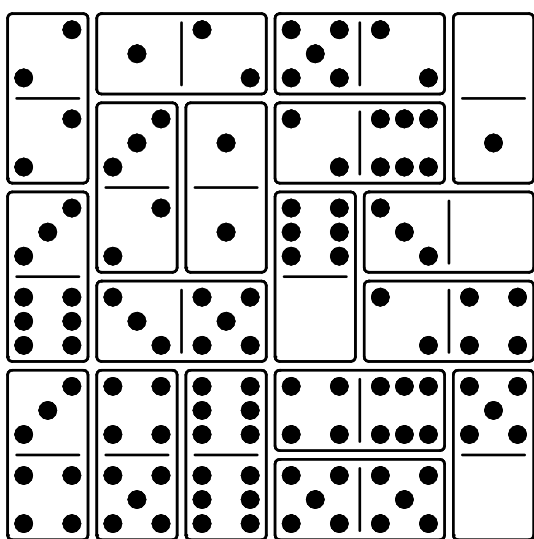
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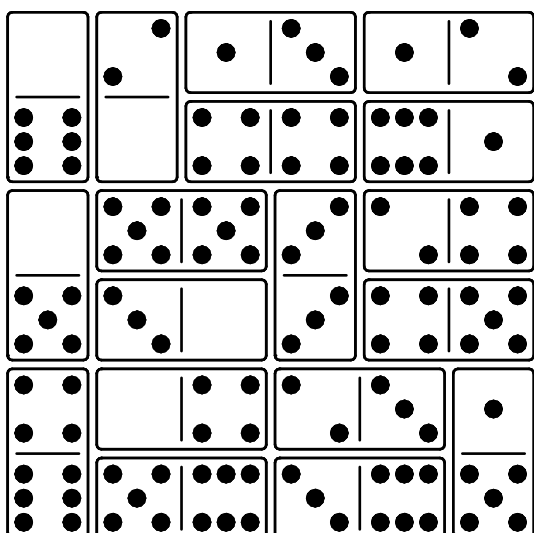
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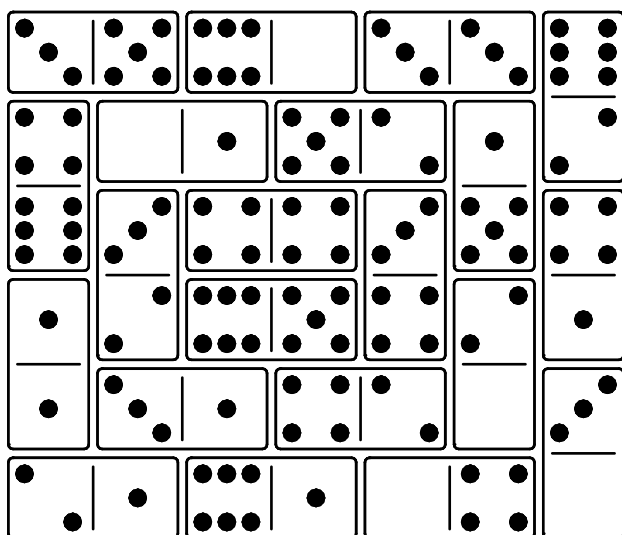
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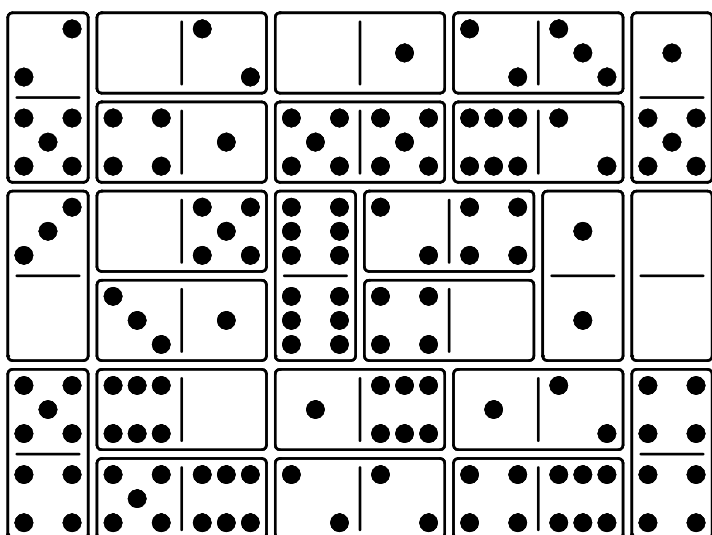
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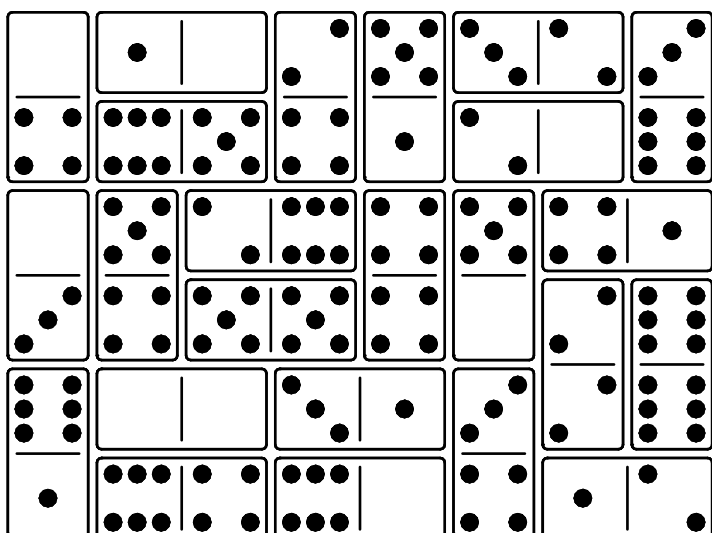
Problem 16



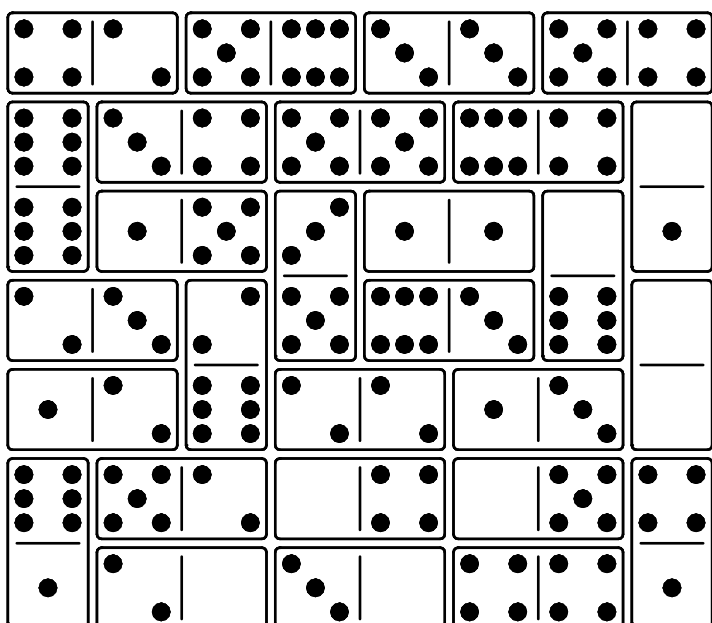
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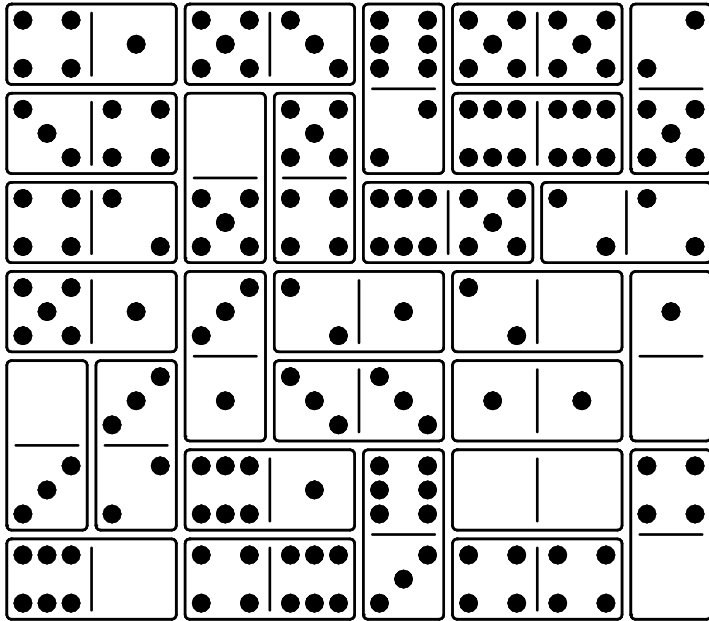
Problem 18



Problem 19



Problem 20



Domino Games

I really enjoy classic domino games like All Fives, and I've played recent inventions like Chickenfoot and Mexican Train. However, I thought I might be able to design a domino game that felt more like a grid than a chain. Tetradoминоes is my attempt to do that.

Tetradoминоes

Play matching dominoes in a grid, then try to play the tetromino shapes on top.

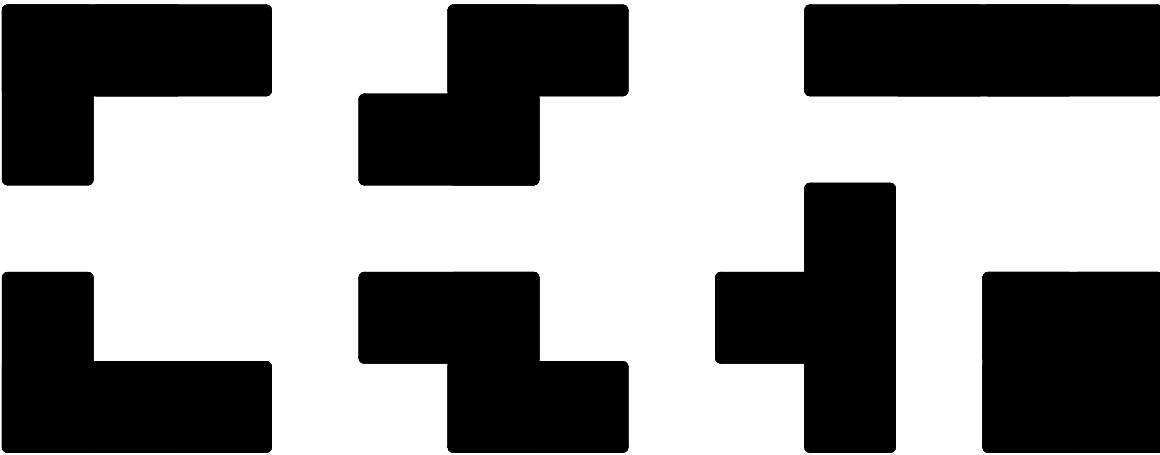
Players

1 to 4 (See the solitaire rules at the end.)

Equipment

- a set of dominoes from double blank to double six
- a set of tokens (small chips or cubes that are small enough to fit on top of a domino) - 2 players need 1 light token and 1 dark token, 3 players need 3 tokens in each of 3 colours (9 in total), and 4 players need 2 light tokens and 2 dark tokens
- seven cardboard tetrominoes (white on one side, black on the other)

To make your own set of tetrominoes, draw these seven shapes on a piece of plain cardboard, and cut them out. Use a marker to colour one side of each shape. Each shape should be big enough fit on top of four domino numbers, with a small gap around the outside.



Object

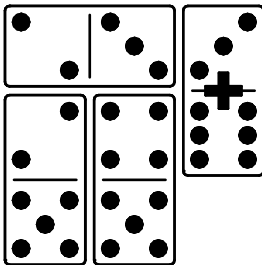
Play the most tetrominoes.

Setup

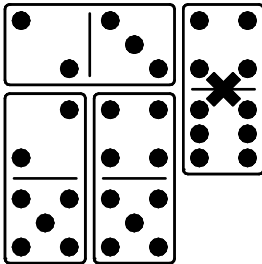
Choose a player to go first through any convenient method. In a 2-player game, the first player takes the light token. The other player takes the dark token. In a 3-player game, each player takes all the tokens of one colour. In a 4-player game, the first player and the player opposite each take a light token and the other players take a dark token. Players with the same colour tokens will play as partners. Shuffle the dominoes face down, and draw four for each player, keeping them hidden from the other players. Put the remaining dominoes and the tetrominoes within reach.

Playing Dominoes

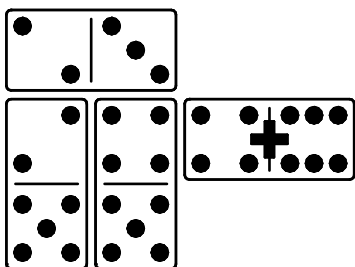
On the first turn, play any domino you like. On each turn after that, you must play a domino so that at least one of its numbers is adjacent to a matching number on a domino that was already played, and isn't covered. For example, the 36 domino can be added as shown, because the 3 matches its neighbour.



In this example, the 46 cannot be added in this position, but it could be flipped to make the 4 match its neighbour.



You don't have to match along the long side, you could also play it like this.



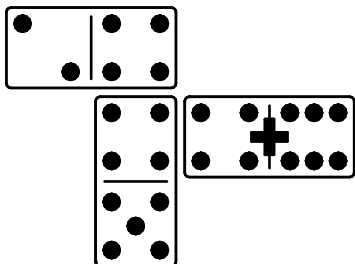
If there are no numbers uncovered at the start of your turn, play a domino so that at least one of its numbers is adjacent to a covered number (they don't have to match). If none of your dominoes match the available numbers, reveal two of your hidden dominoes, and draw one more, keeping it hidden from the other players. If you still can't play, repeat until you can. If you still can't play when there are no more dominoes to draw or when you don't have two hidden dominoes, reveal all of your hidden dominoes, and pass your turn. Leave any revealed dominoes face up until you play them.

If you have fewer than four dominoes, draw a domino and keep it hidden from the other players.

Playing Tetrominoes

After playing a domino, see if you can play a tetromino. It must cover one or both numbers on the domino you just played, it can't hang off the edge of the dominoes, and it can't cover any numbers different from the ones on the domino you just played. Also, two tetrominoes of the same colour can't be right next to each other. (Diagonal is allowed.)

For example, if you just played the 46 domino, you could play an L-shaped tetromino on the 4, 4, 4, and 6 numbers.



With 2 or 4 players, if you have a light token, you must play tetrominoes with the light side up. If you have a dark token, you must play with the dark side up. With three players, all players play tetrominoes with the light side up, and then place one of their tokens on the tetromino.

With 4 players, after a tetromino is played, the two opposing players may each take a domino from their hand, and trade with their partner. This is useful if your partner is about to play and you have a domino that matches something on the board. It can also be useful when you have two dominoes that will work well together. However, you can't tell your partner how to play what you give them.

Game End

With 2 or 4 players, the game ends when one player or team plays four tetrominoes and wins. With 3 players, the game ends when one player plays three tetrominoes and wins.

Solitaire

All the rules about playing dominoes and tetrominoes stay the same, but you're trying to fit all of the tetrominoes into a small space. You can play the tetrominoes either side up, but you get more points if they are mostly the same colour. If you play a domino that can have a tetromino played on it, you must play that tetromino. If you can't play any dominoes, discard one tetromino to count as unplayed, and draw up to four dominoes. Then put the same number of dominoes back in the pile, and shuffle the pile face down.

Level 1 - At the end of the game, count the number of black tetrominoes B, the number of white tetrominoes W, and the number of unplayed tetrominoes X. Calculate your score as $B \times W + 7 \times X$. You win if your score is less than 10.

Level 2 - At the end of the game, imagine a rectangle surrounding the dominoes you played. Count the numbers along the longest side, and add that to the level 1 score. You win if your total score is less than 15. Good luck!

Tournament

Tournament play is a series of games until one player wins seven points. One point for each tetromino.

Domino Finder

A memory game with hidden traps.

Players

2-4

Equipment

- a set of dominoes from double blank to double six
- one pawn for each player, in different colours
- two six-sided dice

Object

For 2 players, find 5 treasure dominoes. 3 players find 4, or 4 players find 3.

Setup

Find the 7 dominoes that have blanks, gather them into a pile, and shuffle them face down. Shuffle the other 21 dominoes face down in a separate pile. Then, take 1 domino from the blanks pile and 3 from the other pile. Shuffle them together so you don't know what numbers they have and you don't know which has a blank. Lay them out face down in a long thin row. Repeat the process until you have 7 rows side by side, but leave gaps between the rows so you can turn them over as you play. You should end up with a rectangle of 7x8 secret numbers.

Each player rolls the two dice, and the highest number plays first. Reroll to break ties. The starting player rolls the two dice to choose the treasure domino.

Play

On your first turn, place your pawn next to one of the face-down dominoes along the edge of the board. Every turn, you flip up one face-down domino, and move your pawn onto it. Your pawn must be next to the domino you want to flip up, but you may move it over dominoes that are already face up, before you get to the domino you want to flip up. You may also move it over empty spaces where dominoes have been removed. You may not move it over blanks or face-down dominoes. Once your pawn is next to the face-down domino you want to flip, place your pawn next to one end, and then flip the domino around the long axis, so the numbers stay in the same position. If you flip over a blank square next to your pawn, then you stepped in a trap! Place your pawn on the blank square, and skip your next turn.

If you flip over a domino that matches the two dice, you found the treasure! Place the treasure domino face up in front of you, move your pawn into the empty space, and prepare for the next treasure: * Flip every revealed trap so that it is face down, unless there's a pawn on it. * Roll the dice to see what the next treasure is. * If you roll numbers that match a previous treasure domino that's now in front of a player or if they match a domino that a player's pawn is on, just roll again. * If you roll numbers that match a face-up domino, flip it face down. Roll again.

Whether you found the treasure or not, your turn ends after flipping one domino. The turn passes to the player on your right.

Winning

As soon as you collect enough treasures, you win the game.

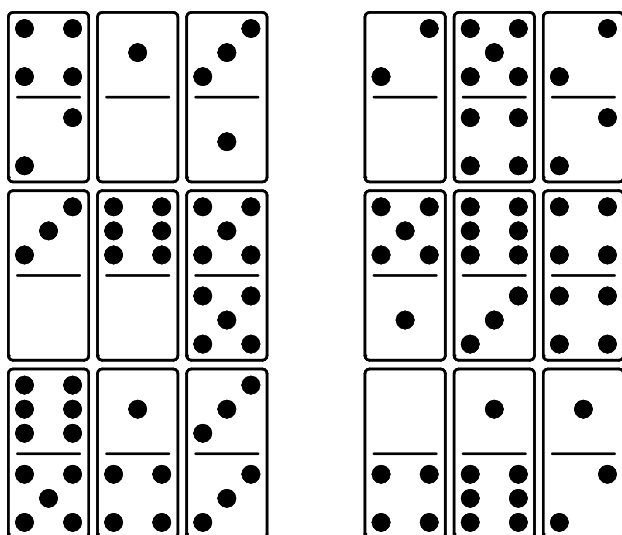
Domino Puzzles By Other Designers

Mountains and Valleys

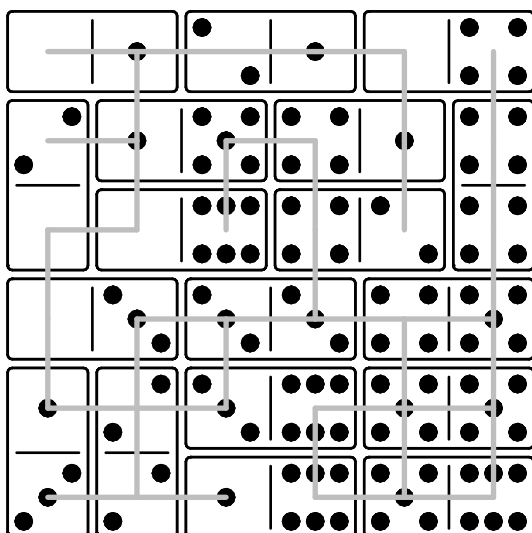
Sid Sackson is one of my favourite game designers. He designed Acquire, Can't Stop, and I'm the Boss, among many, many others. He included Mountains and Valleys in his Beyond Solitaire book, and I adapted it from paper, pencil, and dice to use dominoes.

To start, shuffle a set of double-six dominoes face down, then turn 18 of them face up. The remaining 10 aren't used. Then arrange the dominoes into a 6x6 square of numbers that represents a map of mountains and valleys, where blanks are at sea level, and sixes are the highest peaks. The goal is to make a map where you can walk to every square. You can walk from one square to its neighbour if the two heights are the same or differ by one. (You can't climb cliffs.)

For example, this set of 18 dominoes:



Can be arranged into this solution:



The grey lines show the paths you can walk along.

I like this solitaire, because it can almost always be solved, though finding a solution can be very difficult. There's usually more than one solution. For example, you can flip the 56 domino, above. There is a trivially unsolvable situation whenever one of the numbers from 1 to 5 is completely missing, but that can be quickly checked, and I haven't found any other unsolvable combinations.

Cooperative Version

You can play Mountains and Valleys cooperatively with other players. Shuffle the dominoes face down, then draw 9, 6, or 5 dominoes each when there are 2, 3, or 4 players, respectively. Keep your dominoes hidden from the other players.

Randomly choose a player to go first. That player chooses one of their dominoes and passes it to the player on their left. The player receiving the domino plays it on the table, then chooses one of their dominoes and passes it to the player on their left. Play continues in the same pattern until a 6x6 square is complete. After the first domino, all dominoes must be played so they have at least one neighbour, and they can't be moved after they are added.

When the 6x6 square is complete, see if the whole map is connected as described in the solitaire game. If you need a step of more than one level to get from one section of the map to another, you get a penalty of the number of levels. For example, if a map is completely connected except that you need to go from a 3 to a 5, then you would have a 2 point penalty. A perfect game is zero, and anything under 5 is a good game.

With four players, the last two players will each have an extra domino left at the end of the game.

For a harder solitaire version, draw 18 dominoes, but only turn five of them face up. Each time you play a domino, turn another one face up, until you've turned up all 18. Then play the last five. Use the same placement and scoring rules as the cooperative version.

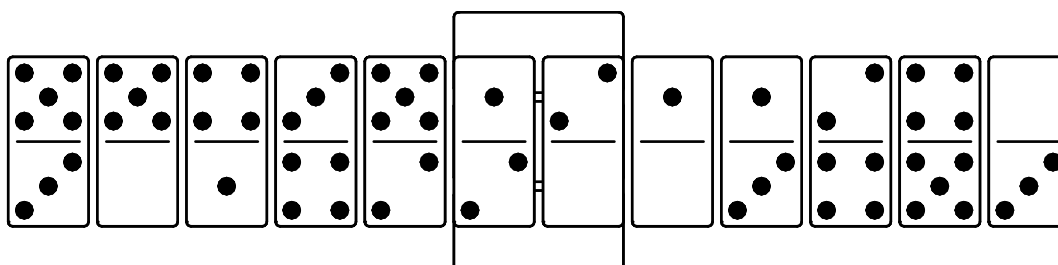
Fujisan

James Droscha is best known as the designer of the piecepack game system, and he designed Fujisan for the piecepack, then adapted it for dominoes and pawns in a paper on using entangled components in solitaire games.

Four Shinto Priests have traveled from their various prefectures in pilgrimage to the top of Mount Fuji. You must find pathways for them to move up and down the mountain until they can all achieve the peak. Often, this will require you to guide them into positions from which they can assist each other.

Setup

Remove all dominoes with the number six and all doubles from a standard set of double-six dominoes. Shuffle the remaining 15 dominoes face down, then place twelve face-up dominoes side by side. Leave the three remaining dominoes face down, and use them to lift up the two middle dominoes as the peak of Mount Fuji. Here's an example layout:



Place a Priest (pawn) beside each number at both ends of the mountain.

Moving a Priest

1. A Priest may move onto a space if the number matches the number of unoccupied spaces the Priest must move in a straight line to get there (including the destination space itself, but not including the space the Priest's starting space). For example, a Priest may move onto a space containing a value 4 coin if there are 3 unoccupied spaces between it and the Priest.
2. Occupied spaces (containing intervening Priests) are not counted when determining if a Priest may move onto a particular space. For example, a Priest may move onto a space containing a value 2 coin if there are 3 occupied spaces and one unoccupied space between it and the Priest.
3. A Priest may move freely between the two spaces on a domino. This is the only manner in which a Priest may move onto a blank space.
4. Once a Priest lands on the peak of the mountain, he will refuse to leave it, but he can move back and forth (in the same domino) or to and fro (between the two dominoes). Clarification: A Priest may pass over the peak dominoes as part of a move.
5. A Priest must enter the mountain from his own starting row; that is, he cannot move back or forth while he remains on the ground.

Goal

The Priests will be content when they all reach the top of the mountain.

Variant

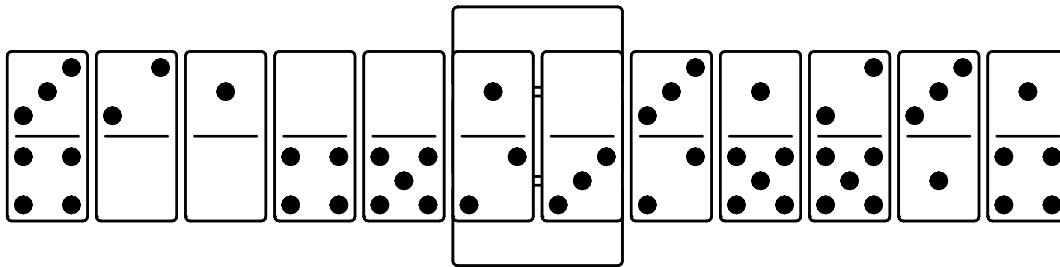
Country Road: Once all four Priests have reached the peak, move the dominoes at the peak to the Priests' original setup positions at the two ends of the mountain and continue until all four Priests have left the mountain.

Treat the spaces at the peak as blanks. Once a Priest leaves the mountain, he will not step back on.

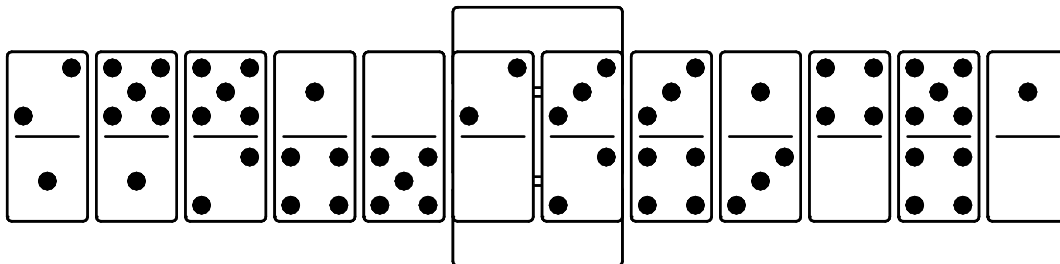
Problems

Shuffling the dominoes generates a nice set of Fujisan problems. In 1000 randomly generated problems, 92% were solvable. Of those, the median solution length was 14, with half of them between 12 and 16. Here are some more challenging problems for you to try. The solutions are listed at the end.

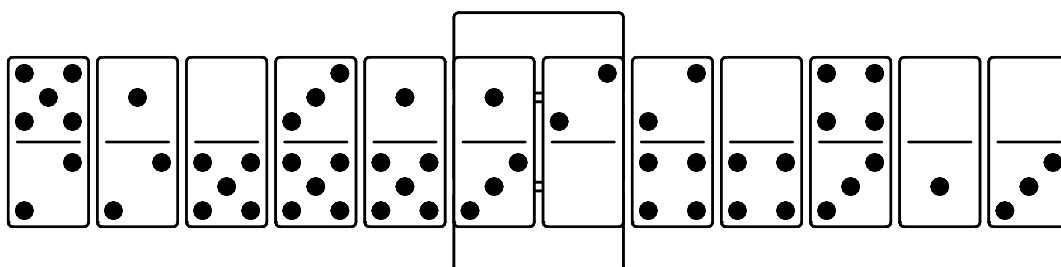
Problem 1



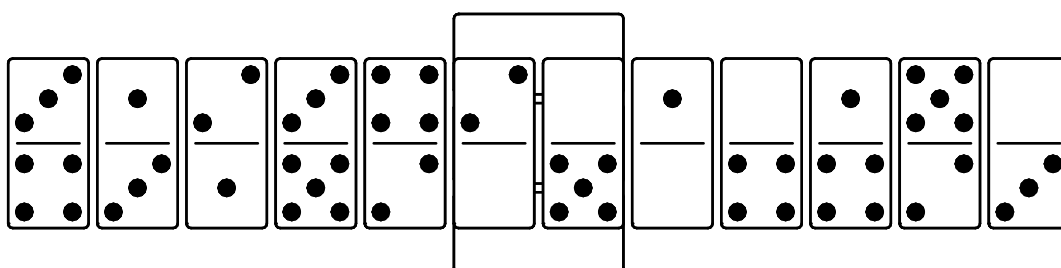
Problem 2



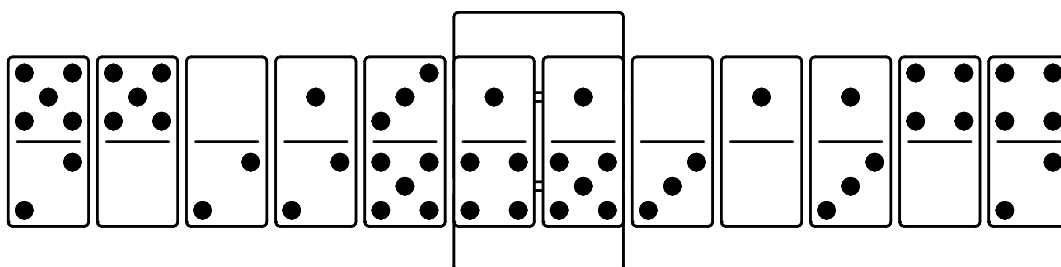
Problem 3



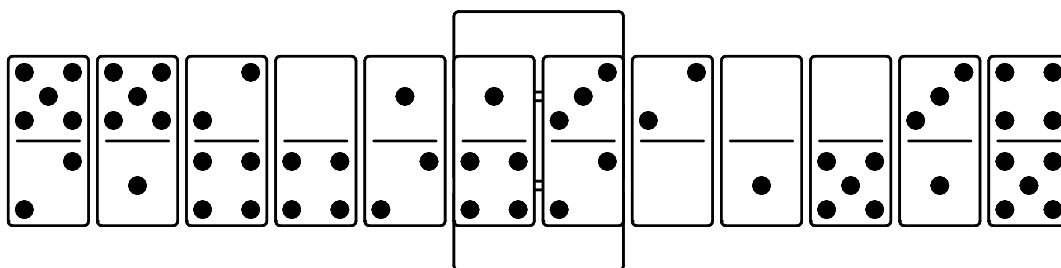
Problem 4



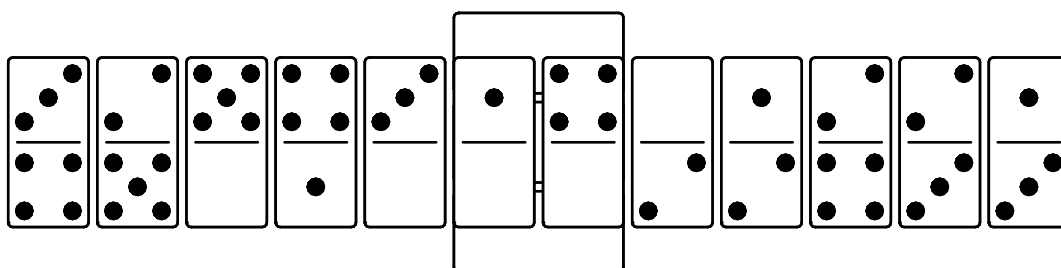
Problem 5



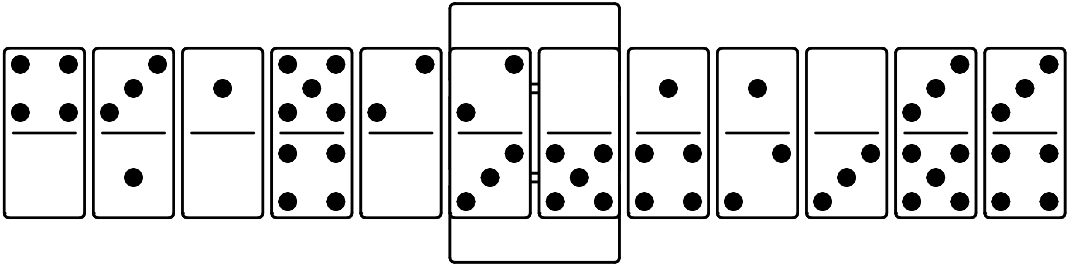
Problem 6



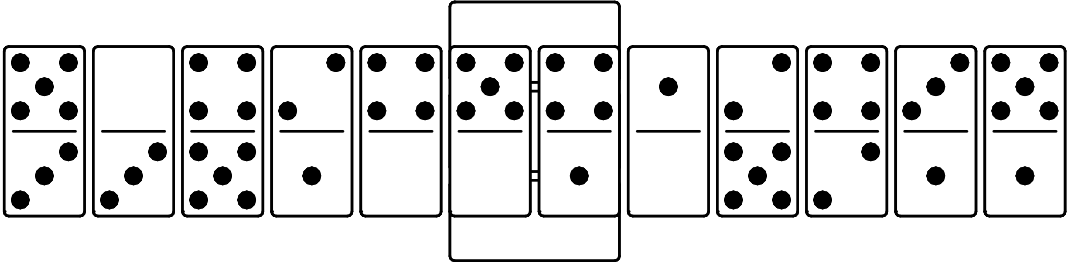
Problem 7



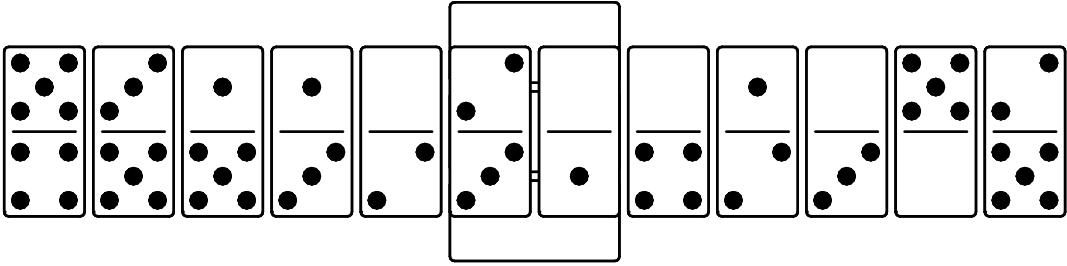
Problem 8



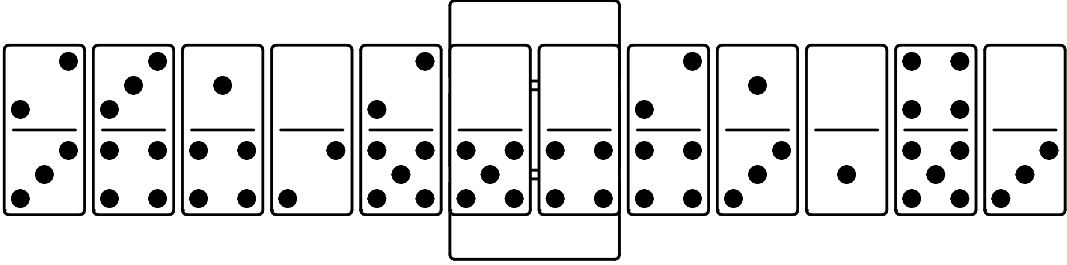
Problem 9



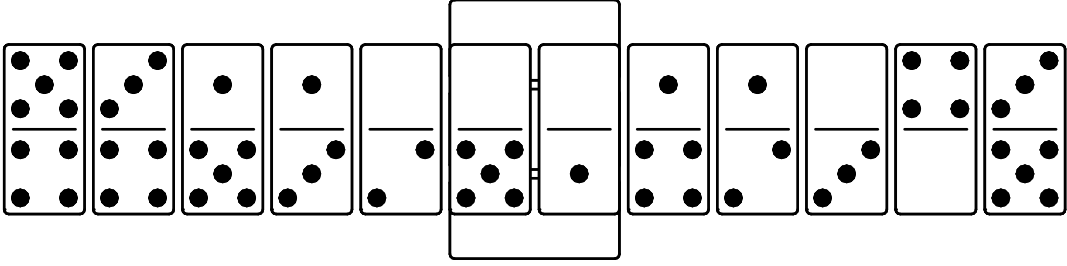
Problem 10



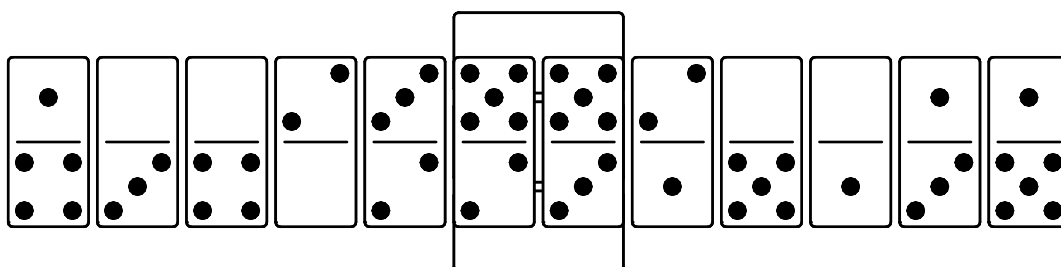
Problem 11



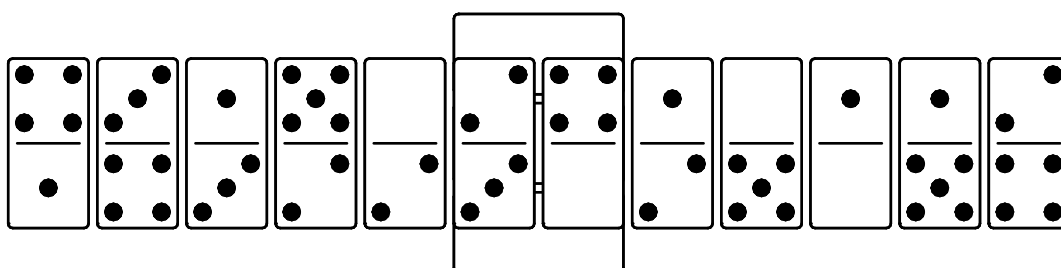
Problem 12



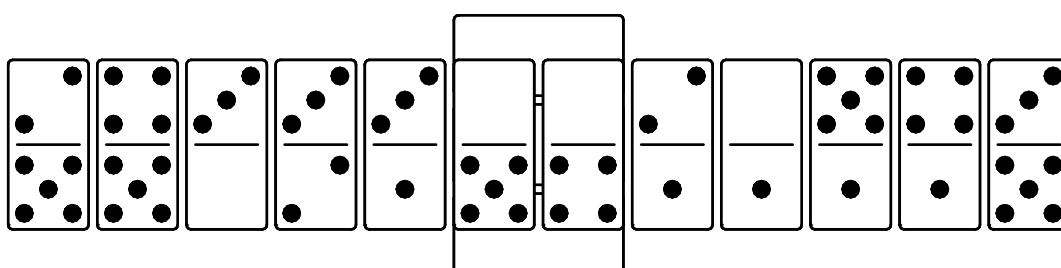
Problem 13



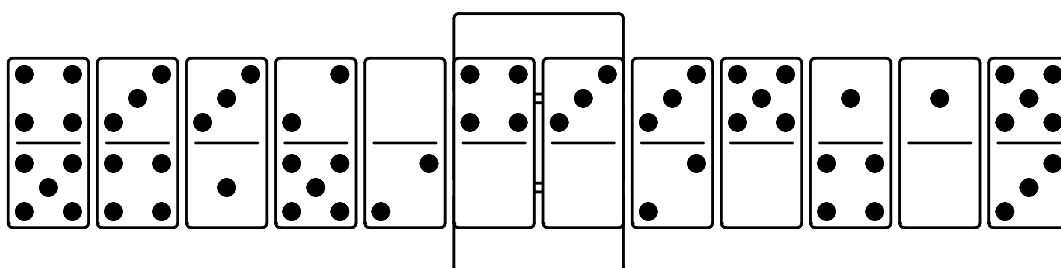
Problem 14



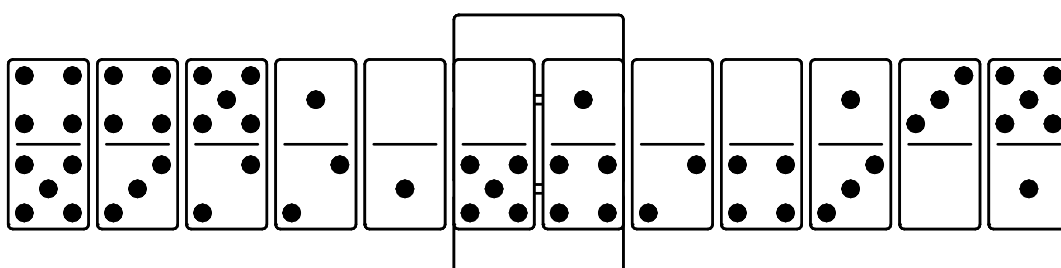
Problem 15



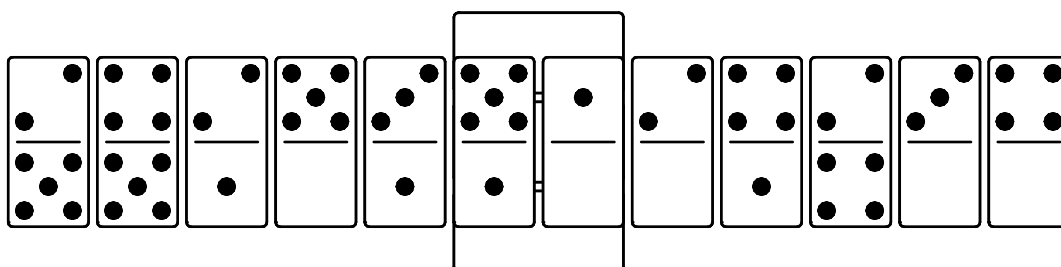
Problem 16



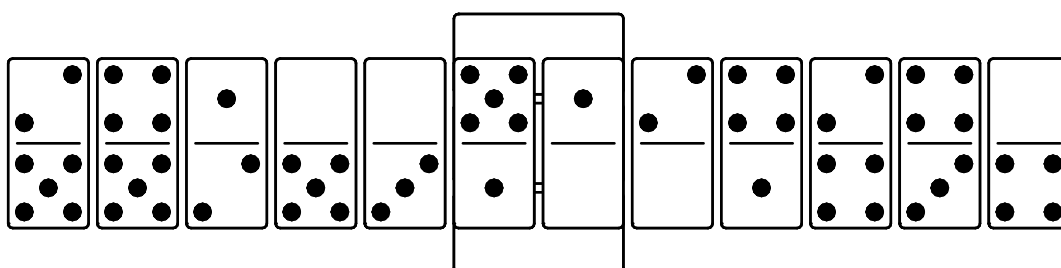
Problem 17



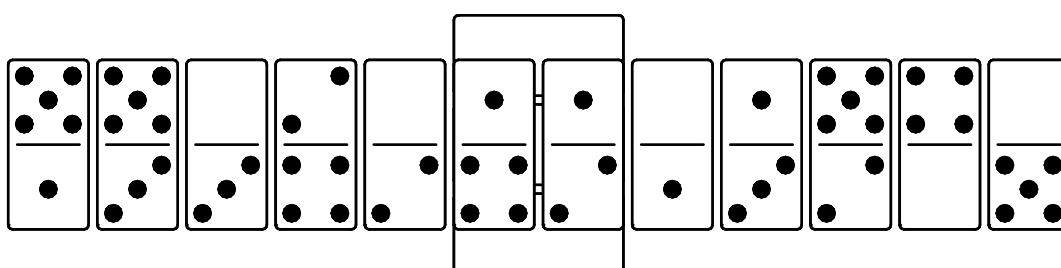
Problem 18



Problem 19



Problem 20



Cobra Paw

Derek Weston is a new game designer who designed this cute quick-reaction game in 2017. I adapted it to use regular dice and dominoes, but the original game has custom dice and dominoes with some nice design features, so check it out if you like this basic version.

Players

2 - 4

Equipment

- a set of dominoes from double blank to double six
- two six-sided dice

Object

Collect six dominoes

Setup

Shuffle all the dominoes face up in the centre of the table.

Any player rolls the dice.

Play

All players try to find the target domino - the one that matches the numbers on the two dice. As soon as you find it, put one finger on the centre of the domino. Whoever gets their finger on the target first, takes it and places it face down in front of them. Then they roll the two dice to start the next search. When you put your finger on the target, be sure not to cover the numbers, so the other players can still see that you got the right one.

If you think the target is already face down, be the first to put your finger on the double blank. If none of the other players can find the target, you can take any remaining domino except the double blank and place it face down in front of you. If you're wrong and another player finds the target, though, all the other players get to take a domino! Plus, the player who found the target gets to take it as well.

Winning

The first player to take six dominoes wins the game. If two players take their sixth domino at the same time, hunt for another domino.

All Fives

Of the traditional domino games, this is my favourite. It has a lot of the same appeal as cribbage: some basic arithmetic, and playing the odds. Just make sure you understand how the sniff works.

Players

2 - 4

Equipment

- a set of dominoes from double blank to double six

Object

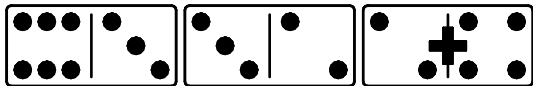
Score points by making the ends add up to a multiple of five.

Setup

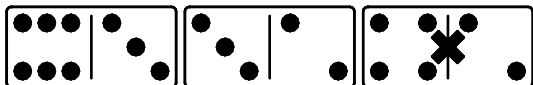
Shuffle the dominoes face down, then draw 7 dominoes each, keeping them hidden from your opponents. (Draw 5 when there are 3 or 4 players.)

Play

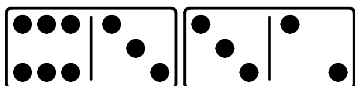
On your turn, you must play a domino with a matching number. In this example, the 24 domino has just been played. It's a valid move, because its 2 matches the 2 on the open end.

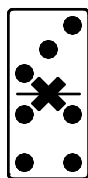


This example is not valid, because the 4 is played against a number that doesn't match.



Dominoes must either be played against an end of the line, or against the sniff. (The sniff is explained below in the rules for doubles.) This example is not valid, because the 34 domino wasn't played against one of the ends.



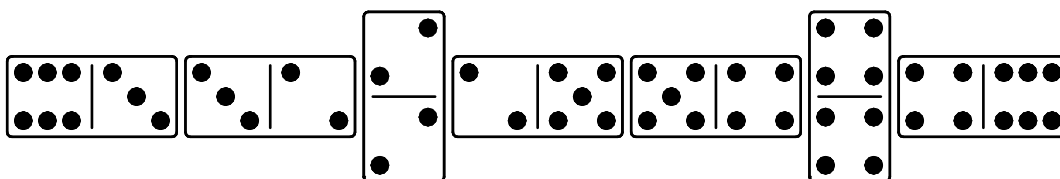


Draw

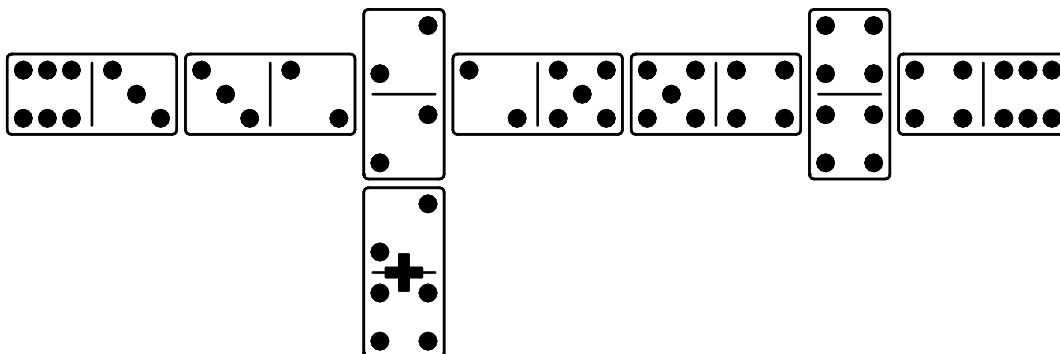
You may draw extra dominoes before you play one, to give you more options. If you can't play any of your dominoes, then you must draw extra dominoes until you get one that you can play. If there are no dominoes left to draw and you can't play any, then pass your turn.

Doubles

There are special rules for doubles, and there are extra special rules for the first double. Most doubles have to be played across the line, like this:



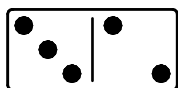
Whichever double gets played first is called the sniff, and it has some differences from the other doubles. You can play against all four sides of the sniff, so if the 22 domino is the sniff, then a 24 domino could be played on the 22 domino, but not on the 44 domino.



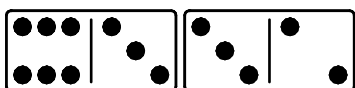
The other difference with the sniff is that doesn't have to be played across the line, you can choose which way to play it. That can make a difference to the scoring.

Score

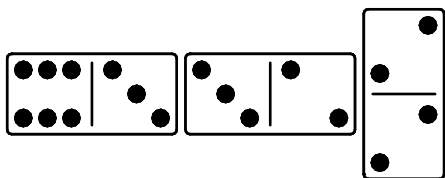
After playing a domino, add up the numbers on the ends. If the total is a multiple of 5, then add it to your score. This example adds up to 5, and scores 5 points.



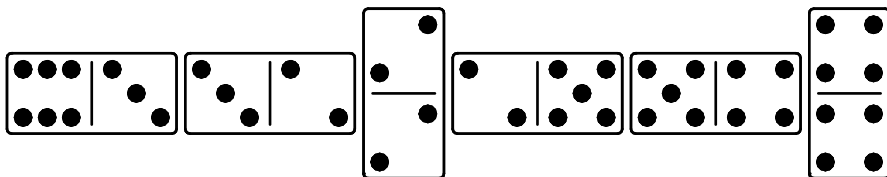
The next player adds a 63 domino, and the total is 8, no score. You don't count the 3's, because they're not on the ends.



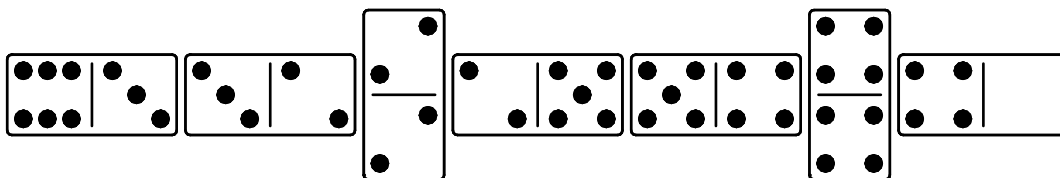
Now the first double gets played (the sniff). It's played across the line, so you count both numbers, and the total is 10. Score 10 points!



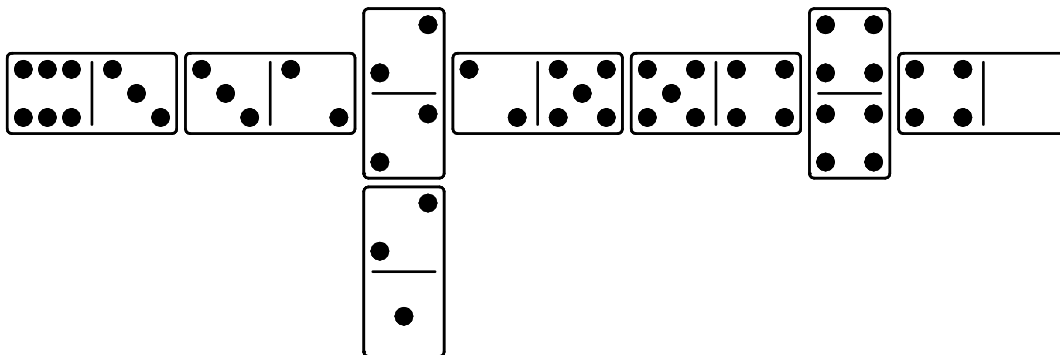
A few turns later, a second double is played. It has to be played across the line, so you count both numbers. The sniff's ends are still open to play on, so you count them, and the total is 18. No score.



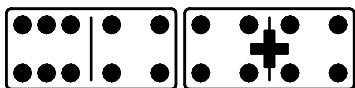
The next play is on the regular double, so we stop counting it. The total is $6 + 2 + 2 + 0 = 10$. Score 10 points.



Don't forget you can play off the sniff. Now the total is $6 + 2 + 1 + 0 = 9$. No score.



Here's an example where the sniff should be played in line instead of across the line. Playing across the line would make a total of 14, but playing in line makes 10 and scores. Don't forget, you can still play off all four sides of the sniff.



Always keep track of which ends need to be counted: there can be 2, 3, or 4. If you run out of room on the table, you can bend a line of dominoes around a corner, but keep track of where the end is.

Going Out

When a player plays their last domino, they score regularly for that domino, plus they get points for the dominoes left in other players' hands. Each player reveals the dominoes in their hand, adds up the numbers, and rounds to the nearest multiple of 5. The player who went out gets that many points.

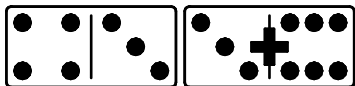
If all players pass, then the player with the fewest points left in their hand goes out. They score the difference between their points and every other player's points. If there is a tie for fewest points, split the score. Always round scores to the nearest multiple of 5.

Winning

If any player has over 200 points after someone goes out, then the player with the most points wins the game. If there is a tie for the most points, continue playing.

Strategy

To make the arithmetic easier, look at the differences between the numbers on your dominoes. If the current total is 7, then you can score by raising the total by 3 or dropping it by 2. In this example, the difference between 3 and 6 is 3, so playing it changes the total from 7 to 10.



Particularly in a two-player game, there is a painful rhythm where your opponent repeatedly scores and you can't. The key to breaking out of that rhythm is to be able to score on a scoring position. Usually, that means playing a domino with a difference of 5. Those dominoes are 6-1, 5-0, and 5-5, so they are useful to keep in your hand.

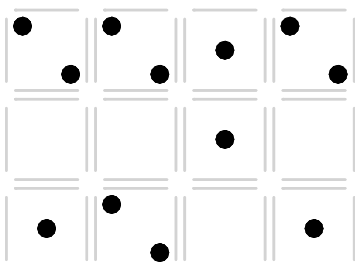
Dominosa

The domino puzzle I most often see in books or online is called either Dominosa or Domino Solitaire. Given a grid of numbers, you have to lay out the dominoes so they match the numbers, without duplicated or missing dominoes. Dominosa was invented by O.S. Adler in 1874. I took a long time to add this puzzle to the collection, because I found it tedious to keep searching for unique numbers. After some research, though, I learned that people have found many other techniques for solving that aren't as tedious. Try to work out your own techniques as you solve these problems, then read my techniques at the end. Let me know if you find any new ones. Even with all those tricks, it's not trivial to solve. (In computer science, it's called NP-hard.)

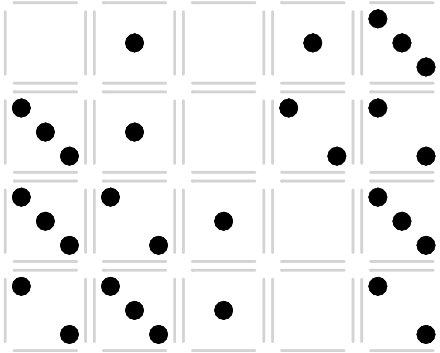
One thing I find interesting about this puzzle is that it's easier to solve with pencil and paper than with a set of dominoes.

If you like this style of puzzle, Reiner Knizia published some puzzles called Domino Knobelspass that are very similar to Dominosa.

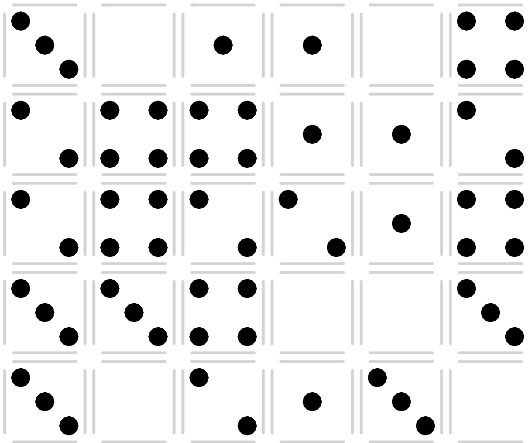
Problem 1



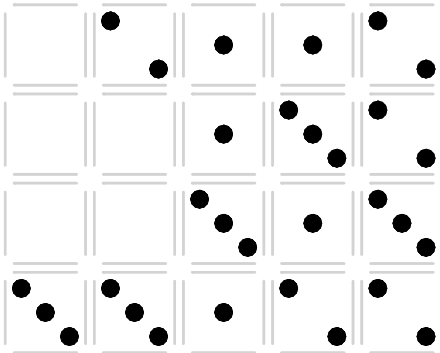
Problem 2



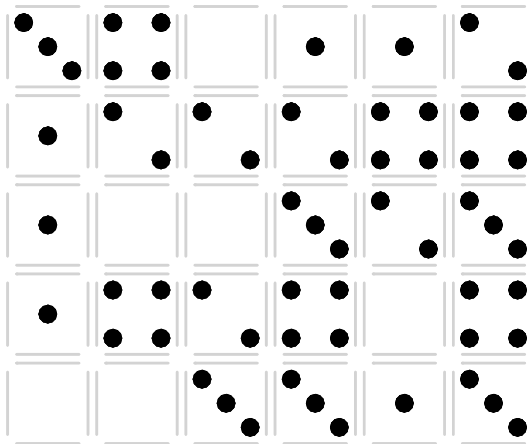
Problem 3



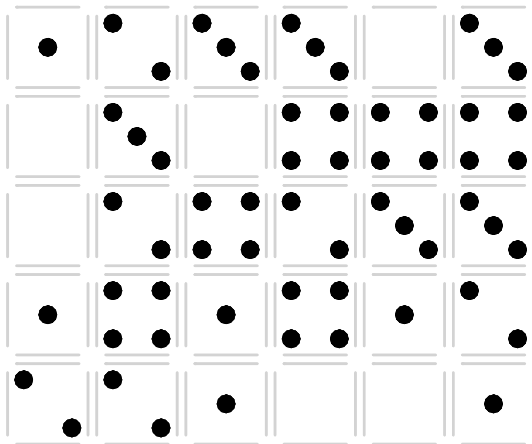
Problem 4



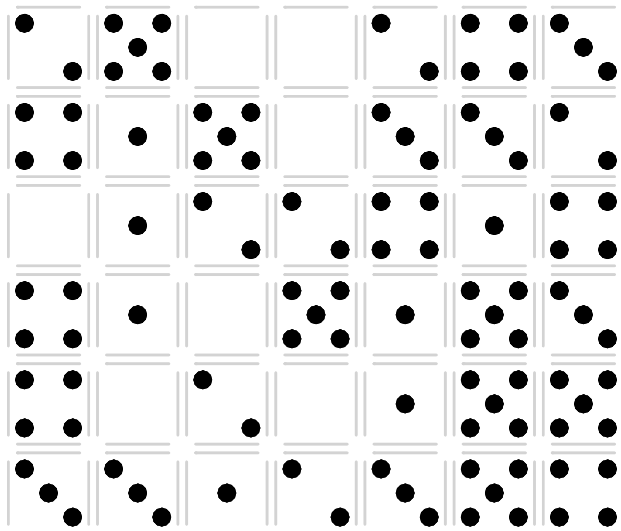
Problem 5



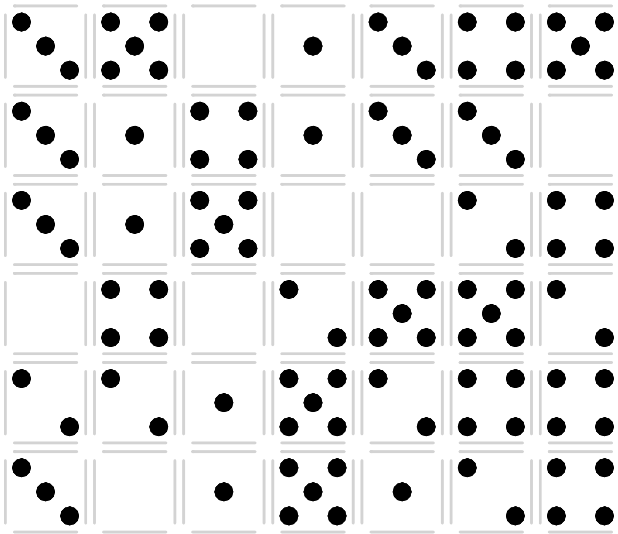
Problem 6



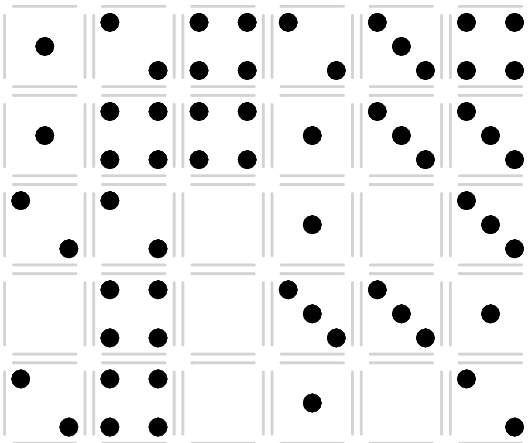
Problem 7



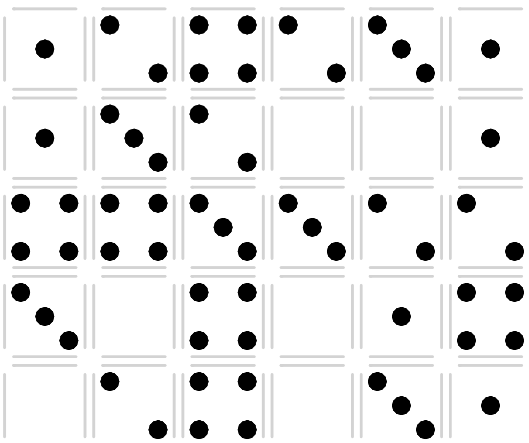
Problem 8



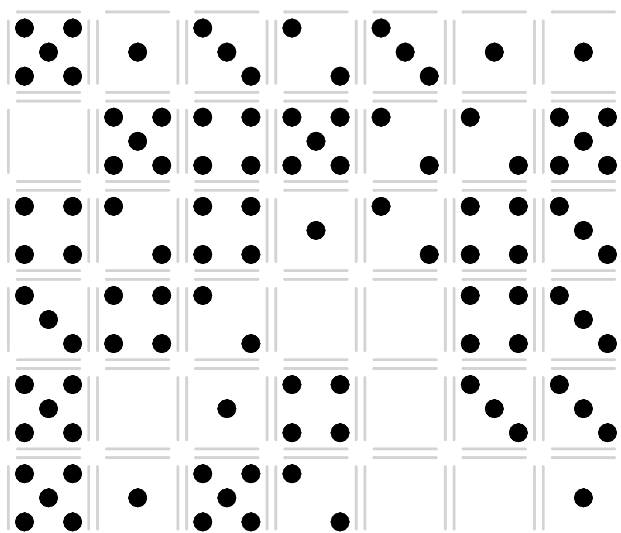
Problem 9



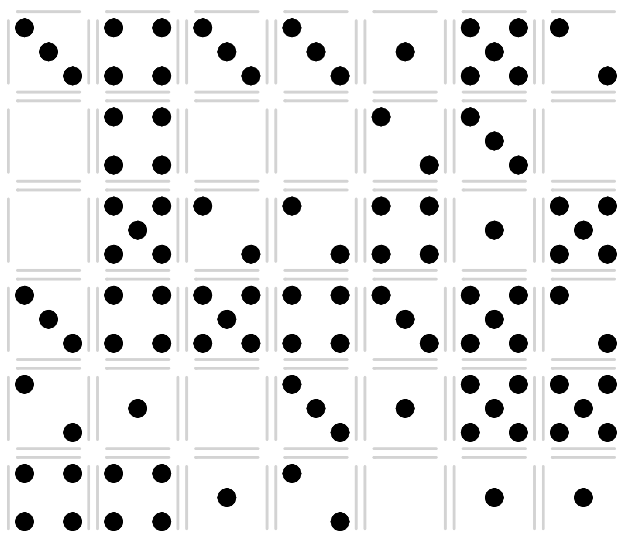
Problem 10



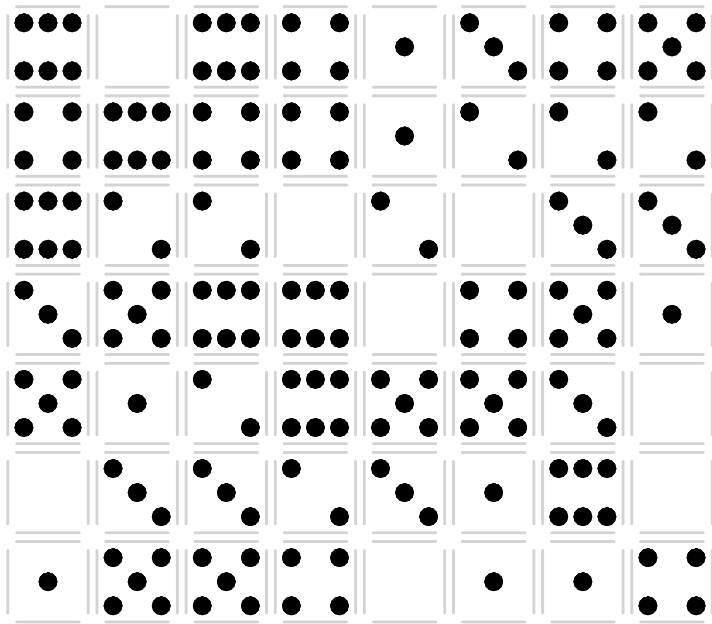
Problem 11



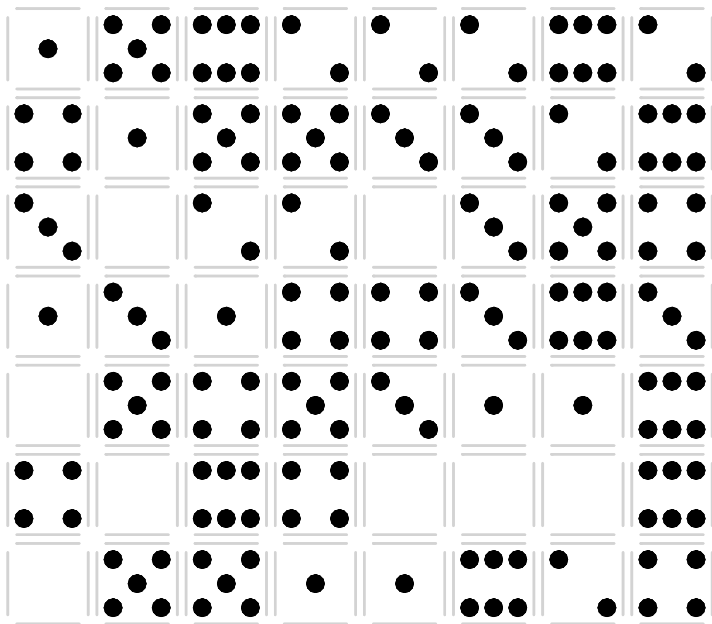
Problem 12



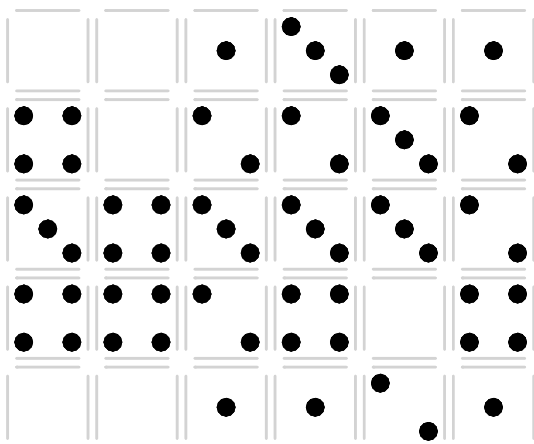
Problem 13



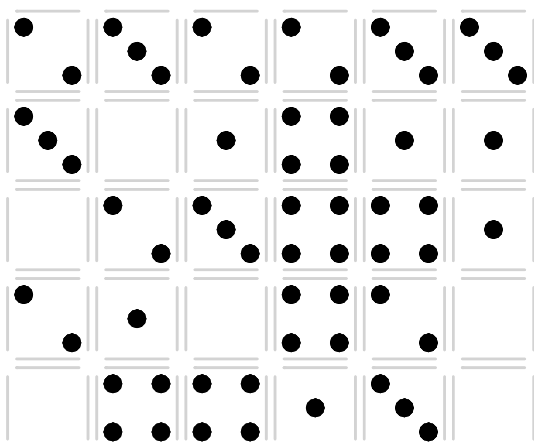
Problem 14



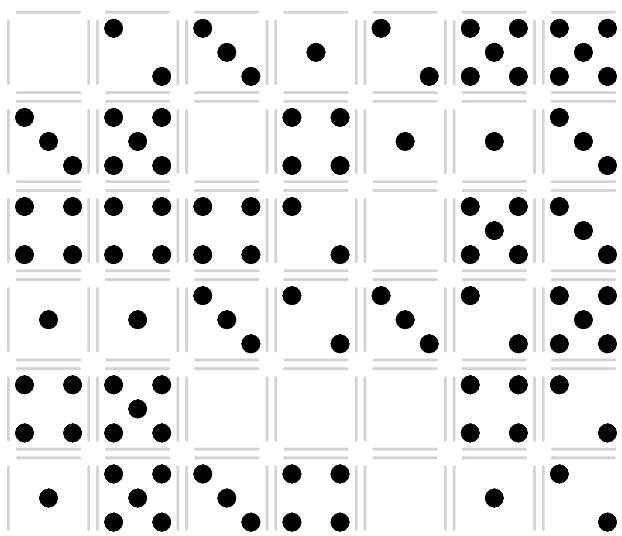
Problem 15



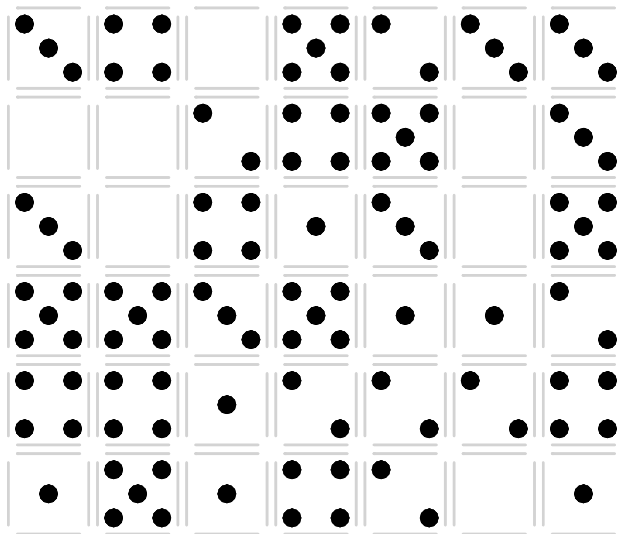
Problem 16



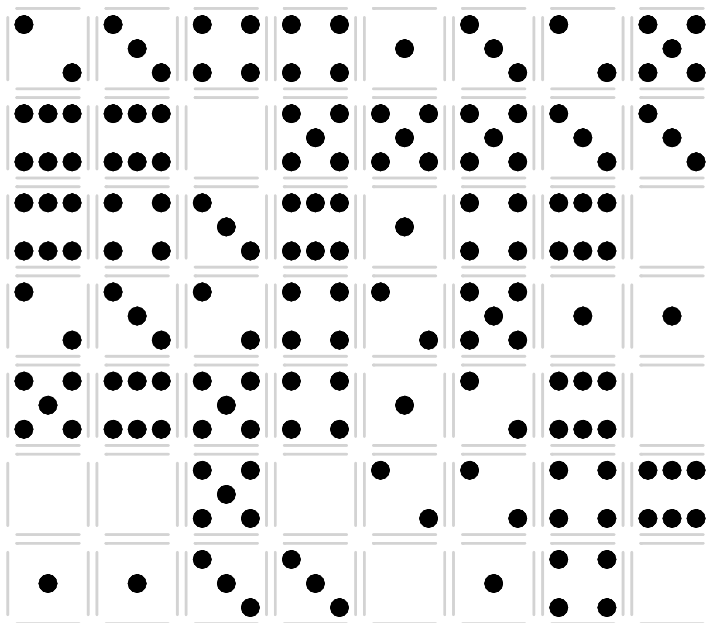
Problem 17



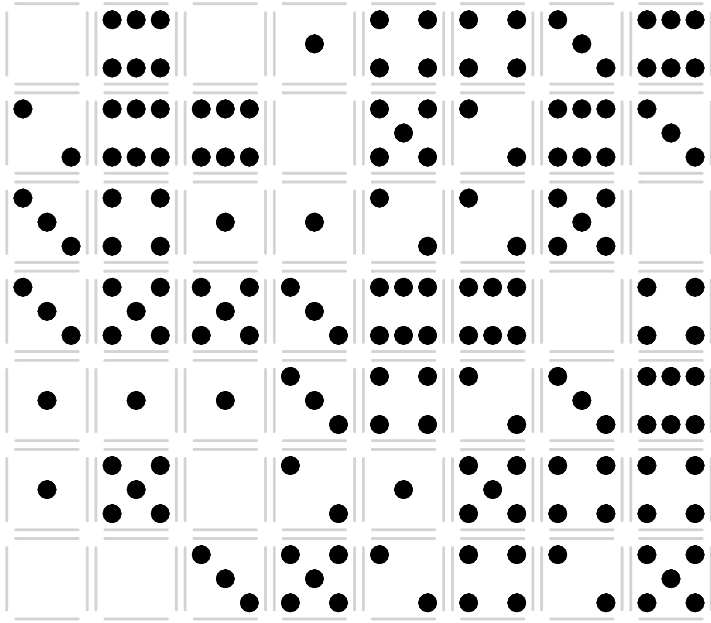
Problem 18



Problem 19



Problem 20



Dominosa Strategy

There are several methods to deduce where the dominoes must be placed, and it's helpful to write notes on the puzzle. Often, you can tell where a domino can't be before you know where it must be. Here are some rules to help you make progress:

1. Look for a number that only has one neighbour, and join it with its neighbour. Particularly check near the last pair you joined.
2. If you have a newly joined pair of numbers, check if the same pair appears elsewhere. Split the other location, because you can't have two dominoes the same. Also check all of the other neighbours that the newly joined pair might have joined with. Those pairs of numbers might now be unique.
3. If you have a newly split pair of numbers, look for the same pair elsewhere on the board to see if there is only one pair like them. If so, join them.
4. If all of a space's available neighbours are the same, you know it will join one of them. Look for the same pair of numbers elsewhere on the board, and mark them as split.
5. If a pair of numbers appears more than once on the board, but all of the pairs share one space, then you know that space must join to the other number. Mark any other available neighbours as split.
6. Look for unique pairs of numbers, and mark them as joined. (This is the tedious part, so I try to only require it a few times in each puzzle.)
7. If two unsolved areas are joined by a narrow neck, you know that both areas must have an even number of spaces in them. That will tell you where you can split or join the spaces in the neck.
8. If none of the other rules apply, guess at a domino's placement by marking a pair as joined. If it later causes a contradiction, backtrack and mark it split. (This would be very frustrating when solving, so none of the problems in this collection require it.)

The easiest puzzles in this collection only require a couple of these rules, and then the later puzzles require more and more different rules to solve.

Solutions

Unmatched Donimoes Solutions

Here are the solutions to the Unmatched Donimoes problems. For each step, move the listed domino left, right, up, or down.

1. 24R, 24R, 23D

2. 24U, 02L, 02L, 02L, 24D, 46D
3. 53L, 53L, 63D, 24L, 34D, 24L, 24L, 34U, 63U, 30L, 53L
4. 20L, 63L, 62L, 54U, 20L, 63L, 62L, 05U, 20L, 20L, 20L, 05D, 54D, 63L, 62L
5. 65L, 65L, 52D, 14D, 53D, 34D, 04R, 04R, 60U, 10U
6. 04D, 04D, 43R, 43R, 43R, 04U, 50U, 06L, 51U, 02L, 00U
7. 06L, 54L, 06L, 06L, 06L, 06L, 43U, 46L, 43U, 54L, 46L, 46L, 16U, 54L, 54L, 43D
8. 22R, 22R, 22R, 22R, 34D, 50D, 54L, 25D, 50U, 54L, 54L, 34D, 46R, 54R, 54R, 50D, 46R, 46R, 34U
9. 21L, 06R, 16R, 21R, 62R, 64U, 64U, 24L, 62L, 04U, 04U, 11L, 11L, 13D, 03D
10. 43U, 31U, 43U, 31U, 43U, 31U, 43U, 31U, 43U, 31U, 43U, 25U, 30R, 53U, 30R, 25U, 53U, 53U, 00R, 25U
11. 23L, 52R, 12R, 34R, 23R, 23R, 05D, 10L, 40L, 45L, 60L, 41L, 64L, 65U, 65U, 52R, 12R, 34R
12. 12R, 66R, 10D, 16L, 63L, 12R, 54D, 63R, 16R, 10U, 66L, 62D, 10D, 16L, 12R, 63L, 60L, 12L, 16L, 10U
13. 11D, 22D, 11D, 22D, 40R, 40R, 63U, 63U, 20R, 50R, 01U, 21R, 21R, 01D, 50L, 23D, 61D, 20L, 63D, 63D, 40L, 40L, 22U, 11U
14. 31R, 40L, 44D, 46R, 31R, 23U, 56U, 55L, 55L, 33L, 33L, 63L, 63L, 54D, 54D, 11R, 11R, 44D, 25L, 25L, 41D, 25L, 44U, 11L, 11L, 54U, 54U, 63R, 33R, 55R
15. 55R, 21R, 65D, 65D, 33R, 33R, 43U, 66U, 45L, 25L, 35L, 00D, 44L, 44L, 44L, 11U, 61U, 00U, 35R, 25R, 45R, 66D, 65D, 21L, 55L, 11U, 61U, 13R, 32R, 40R, 43D, 33L, 22L, 05L
16. 32U, 42L, 46L, 32D, 12L, 56L, 50L, 52U, 52U, 20R, 20R, 04R, 04R, 34U, 13U, 55R, 55R, 66U, 55R, 13D, 55R, 34D, 04L, 20L, 52D, 04L, 20L, 52D, 50R, 56R, 12R, 32U, 66U, 26L, 33L, 45L, 46R, 42R
17. 45R, 42R, 02D, 42R, 06R, 06R, 64D, 64D, 11L, 51L, 66L, 11L, 51L, 66L, 10U, 10U, 42R, 42R, 61U, 14U, 35R, 25R, 45R, 65U, 65U, 65U, 40R, 45L, 25L, 14D, 35L, 42L, 61D, 42L, 62L, 33L, 10D, 10D, 66R, 51R, 11R
18. 60R, 53U, 53U, 43R, 15R, 60R, 40U, 40U, 25L, 25L, 46U, 42U, 05L, 41L, 13U, 13U, 41R, 05R, 42D, 46D, 32R, 61R, 03R, 25R, 25R, 40D, 40D, 60L, 15L, 43L
19. 41U, 22L, 35U, 35U, 13L, 13L, 66D, 40D, 43D, 66D, 40D, 43D, 60R, 60R, 55U, 55U, 52R, 62R, 10R, 05U, 45R, 61U, 05U, 64R, 61D, 45R, 64R, 64R, 45R, 05D, 45R, 05D, 10L, 62L, 52L, 55D, 55D, 60L, 60L, 43U, 40U, 66U
20. 53L, 66L, 23L, 53L, 22D, 22D, 60R, 44R, 50R, 60R, 42R, 44R, 50R, 42R, 33U, 33U, 66L, 66L, 51U, 52U, 54U, 55R, 55R, 11U, 11U, 01L, 65L, 63L, 64L, 16D, 20R, 16D, 40U, 41U, 16U, 20L, 40U, 41U, 16U, 64R, 63R, 65R, 55R, 54D, 01R, 11D, 52D, 51D, 66R, 66R, 33D, 33D, 42L, 50L, 44L, 60L

Capturing Donimoes Solutions

Here are the solutions to the Capturing Donimoes problems. For each step, move the listed domino left, right, up, or down. Then make captures for any matching numbers.

1. 10D, 14R, 23D, 14R
2. 60R, 10R, 12D, 12D, 53R
3. 21R, 34U, 45R, 34U, 16U
4. 03L, 46L, 05R, 34U, 45R, 46L, 45R
5. 54R, 20D, 46D, 06L, 36R
6. 34L, 64L, 55L, 35D, 50R, 60D
7. 61D, 43R, 55R, 53D, 53D, 20R, 36R
8. 26R, 24L, 65L, 01L, 30L, 06U, 30L
9. 40D, 65D, 54L, 01D, 36D, 15R, 23D
10. 30U, 56L, 30D, 10U, 10U, 63R, 30D, 41R, 60D, 25R, 41R, 41R
11. 21L, 23L, 60L, 05L, 65L, 33D, 42R, 42R, 01R, 30L, 60R
12. 30D, 54L, 20L, 54L, 54L, 20L, 20L, 64D, 25R, 15L, 15L, 12R
13. 63L, 01L, 50L, 50L, 21D, 66R, 64D, 40R, 40R, 15R, 43U
14. 50D, 45D, 36D, 22D, 66U, 46R, 46R, 60D, 30L, 01D, 01D, 26R, 12R
15. 12R, 44R, 44R, 33U, 20U, 05U, 46U, 56L, 56L, 30L, 45L, 15U, 36R, 15U
16. 21L, 61L, 04L, 04L, 20D, 15D, 52R, 01R, 32U, 46D, 65L, 41U, 34U, 01R, 35R
17. 54D, 60L, 60L, 25D, 02L, 02L, 01L, 01L, 55L, 62L, 11U, 11U, 40R, 44U, 46R, 22R, 46R, 22R, 16L
18. 61D, 60L, 60L, 31L, 31L, 03D, 04D, 10L, 54D, 26L, 10L, 26L, 24D, 51D, 51D, 41L, 36D, 41R, 34U, 34U, 12L, 20R, 34U

19. 41D, 30R, 12L, 61U, 61U, 20R, 26D, 13L, 34L, 06D, 34L, 55L, 35U, 35U, 11R, 64R
 20. 25U, 40D, 10D, 63D, 60R, 60R, 32D, 20R, 31D, 65R, 62D, 21R, 51R, 34L, 53R, 51R

Fujisan Solutions

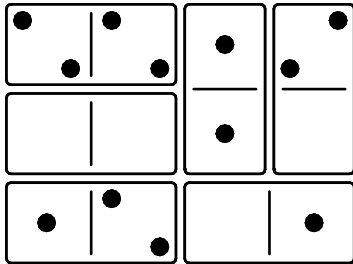
Here are the solutions to the Fujisan problems. To distinguish the four different pawns, the top left is labelled as a (P)awn, the bottom is a k(N)ight, the top right is a (B)ishop, and the bottom right is a (R)ook.

1. NR4, NR2, PR2, PR1, PD, PR3(+1), BL1, BL2, BD, RL5(+3), RU, RR1, PU, BL3
2. NR1, NU, BL1, BD, BL3, RL4(+1), RU, BU, BL5(+1), RL5(+1), PR1(+3), NR2(+3), ND, PR2, RR3(+2), RD, BR3(+1)
3. NR5, NR4, RL4(+1), NL5(+1), NU, PR3(+1), NR1(+1), PD, PR4(+1), RR3(+1), RU, PU, NR4(+1), BL2(+3), RL2(+3), PL1(+2), PD, RD, NL2(+1), BL1(+1)
4. RL4, RL5, RU, PR4(+1), PD, RD, NR5(+2), NU, RR4(+1), RR3, RU, PU, PR5(+1), BL1(+2), PL4(+2), PD, PR4, PU, BL2(+2), BD, PL2(+1), RD, RL5
5. NR5, NL2, NL2, NU, RL3, RL5, RU, RL1, PR3(+2), PD, PR3, PU, NR3(+1), RR1(+1), NR4(+2), ND, PR4, NU, BL1(+2), NL1(+1), NL3(+1), NR1(+1), BD, BL4, PD, PL5
6. NR4, NU, NR1, NL2, ND, NL1, NU, PR2(+1), PD, ND, NR2(+1), NR5, NU, NL2, NR4, ND, PR2, PR5, PU, PL2, RL1(+1), RU, NU, BL3(+3), BD, NL3(+2), PL1(+1), RD, RL4(+1)
7. BL1, BL2, BD, BL2, PR2, PR3, PD, PR4(+1), BR3(+1), RL2(+2), BL2(+2), BU, BL3, RU, RL5(+1), BL3(+1), BD, RD, PL2, PL5(+1), NR1(+3), RU, PU, PR4(+1), PD, RR4, NU, BU, BR3(+1), NR1(+1), ND, BR1
8. RL3, RU, RL1, RL5, RL1, RR2, RL4, RD, NR1(+1), NU, RU, PR1(+2), RR2(+2), RD, NR2(+1), PD, PR4(+1), RR5(+1), RL2, ND, NR3(+2), RU, RR3, PU, PR3, NU, BL1(+3), PL1(+2), PL2, PR, NL2(+2), ND, BL2(+1), RD, RL5
9. RL1, RL1, RU, RL2, RL4, RD, RL1, RU, PR4(+1), RD, RR5, RU, PR4(+1), PD, RL1, RR3, PU, BL2(+2), PL1(+1), RL4(+2), BL4(+2), PL5(+2), PD, RD, RL3, BD, NR1(+3), PU, PR5, PD, BU, RU, RR4(+1), RD, BR4, NL3, NU, NR5
10. RL3, RU, RR2, RD, RL4, RL5, NR3(+1), NR4, NL5(+1), NU, RR2, RL4, RU, PR1(+2), PD, ND, RD, RR2(+2), NR4(+2), NU, NR1, ND, PR4(+1), RR3(+2), RU, NU, NR2(+1), PL5, PR2, PU, PR5(+1), BL1(+3), ND, NL4, NL1, RD, PD, PL3(+2), PU, PR, BL2(+1), RL3(+1)
11. NR5, NU, NL3, ND, NR2, NR4, NU, NR1, ND, NR1, RL4(+1), RR3(+1), NL5, RL4, RL4(+1), RU, RL2, NU, NL3, PR1(+2), RR2(+2), RD, NR2(+1), PD, PR4(+1), RR3(+1), PR1(+1), PU, RU, NR4(+2), BL2(+3), ND, NL4, BD, RD, PD, PL4(+3), NU, BR3(+1), BL5(+1), BU, PR4, RR3, RL5(+1)
12. RL3, RU, RL1, RL1, RD, RL5, RR2, RL4, NR3(+1), NR4, NL5, NR2, NU, NL3, RU, PR1(+2), PD, ND, RD, RR2(+2), NR4(+2), NU, NR1, ND, PR4(+1), RR3(+2), RU, NL5(+1), PU, NR2, NU, NR4(+2), ND, PR3(+1), NU, BL1(+3), ND, PD, PL5(+1), PU, NL5, RL1(+1), RD, BD, BL1(+1), BU, RL1
13. BL1, BL1, BD, BL1, BU, BL2, BL3, BD, BL3, BU, PR1, PR2(+1), PD, PR5, PL1, PR3, PU, PR1, PD, BR2, BD, BR5, BL1, BR3, RL1(+2), RU, BU, PU, PL2(+2), PL3, PD, PL4, BL2(+1), BL3, BD, RL2, RD, RL4(+1), RU, BL3, RD, NR2(+3), PR2(+3), PU, BR3(+2), RR2(+1), NL4, NU, NR5(+1)
14. NR3, NR2, NU, NL3, ND, NR2, NR5, NU, NR1, NR2, BL1(+1), NL1(+1), ND, NL2, NU, BL1, BL5(+1), BL1, BD, BR2, BU, ND, NR4, NU, NL1, NL1, NL5(+1), NL1, ND, NR2, BL4, NU, NL3, PR1(+2), PD, ND, BD, BR2(+2), NR5(+2), NU, PR5(+1), BR5(+1), NR1, ND, RL2(+3), RU, RL2, PL3, PR, NL3(+1), BU, BL4
15. PR3, PL2, PR3, PD, PR1, PU, PR5, PD, PL1, PU, PR3, PD, RL1(+1), PL1(+1), PL1, PU, RU, RL2(+1), PL3(+1), RL3(+1), RD, PR5, PL2, PD, PL5(+1), PU, RU, RL2(+1), RD, PD, NR2(+2), PU, PR3, PR5, PD, PL1, NU, RU, RR3(+1), NR5(+1), PU, RR4(+2), BL2(+3), ND, NR1, NL4, NU, RD, RL5, BD, PD, PL5(+2), PR4(+1), BL5(+2), RU, BR5
16. PR3, PD, PR2, PU, PL3, PR2, PR5, PD, PR3, PU, BL1(+1), PL1(+1), PD, BL3, BD, PL5(+1), PU, PR5, BU, BR1(+1), PD, BD, BL5(+1), BL1, BR2, BU, BL4, BD, PL5, PL1, PR2, PU, PL3, PD, NR1(+2), PR2(+1), NU, BU, BR2(+1), NR5(+1), ND, NR3, BR5, BD, PR4(+1), RL2(+3), PU, PL3, PD, BU, RU, RR1(+1), NU, NL4(+2), ND, BR1(+1), BL4(+1), RL3
17. RL3, RL2, RU, RL5, RR1, RD, RR1, RL3, NR2(+1), NU, RR2, ND, NR1(+1), NR4, NU, NR1, ND, NL2, RR4(+1), NU, NR3, ND, RU, RR1, RD, RR1(+1), RU, NU, BL1(+2), BD, ND, RD, RL2(+2), RU, RL5, RR1, RD, NL2(+1), NU, NL5, ND, BL2, BL5(+2), BU, NU, RR1, RL3, RU, PR1(+3), PD, PR1, PU, ND, NR4, NL, NU, PR1(+1), BD, BR5, RD, RR4(+1)

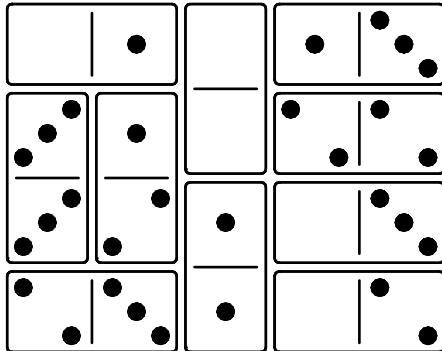
18. BL4, BL5, BD, BL1, BU, BL2, PR2(+1), BR3(+1), BR4, BL5, PL2, PR3(+1), BR4(+1), BD, PD, PR4(+1), PU, PL2, PD, BU, BL5, BD, PL5(+1), BL1, BU, BL2, BD, NR1(+2), PU, BU, BR3(+1), BR4, BD, PR3, PD, PR4(+1), PU, PL2, PD, BU, BL5, BD, NR1(+1), BR4(+2), BU, BL2, BR3, BD, NR4(+1), PU, PR4, PD, RL1(+3), RU, PU, PL5(+1), BU, BL2(+1), NU, NL1(+2), ND, RL1(+1), BD, BL1(+1)
19. BL4, BD, BL5, BU, BL1, BL2, BD, NR2(+1), BR3(+1), BU, BR4, BD, BL5, NU, NL2, ND, NR3(+1), NU, BU, BR4(+1), BD, ND, NR4(+1), NU, NL2, BL5, ND, NL5(+1), NU, BU, BL2(+1), PR1(+2), ND, BD, BR3(+1), BU, BR4, BD, PL2, PD, PR3(+1), PU, NR3, NR4(+1), NU, NL2, ND, BL3(+1), BR4(+1), BU, NU, PR4(+2), ND, NR4, PD, BD, RL1(+3), BU, NU, NL5(+1), BL2, BL1, BD, RL3(+1), PL5(+2), PR1(+1), RU, RR1(+1)
20. NR3, NR2, NU, NR5, ND, RL3(+1), NL1(+1), RL4(+1), RU, NU, NL5(+1), ND, RD, NR2(+1), NU, RU, RR5(+1), RL1, RD, RL1, RU, RL5(+1), ND, NL3, NL1, NU, PR2(+2), PD, NR2(+1), RD, RR2(+1), RU, NR5(+1), NL1, ND, PU, PR5(+1), PL1, NL1, NU, RR4(+2), RD, PD, PL1, PL4, PU, NL5(+1), PD, ND, NR2(+1), NU, PU, PR5(+1), PD, ND, NR5(+2), NU, PU, RU, BL1(+3), BD, PD, PL2(+1), PU, BL2, RD, ND, NL4(+2), NU, RL4(+1)

Dominosa Solutions

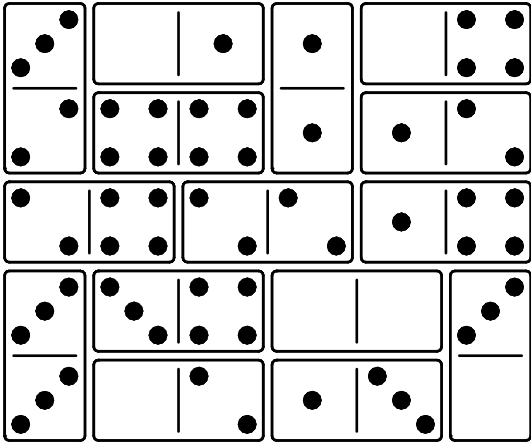
Solution 1



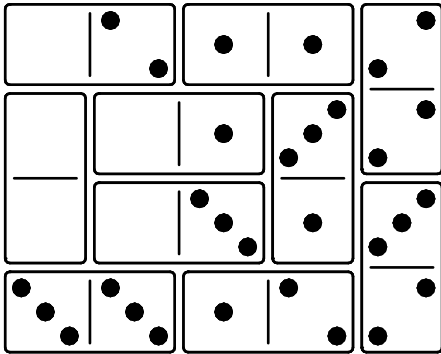
Solution 2



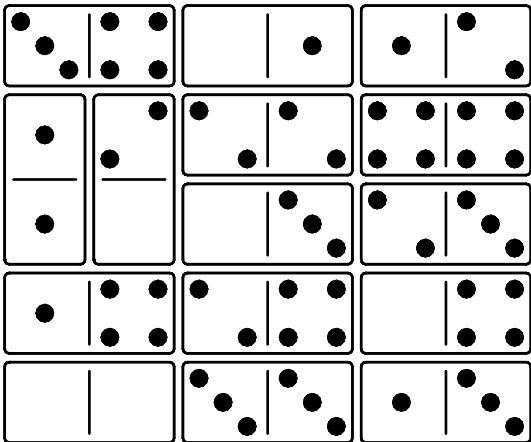
Solution 3



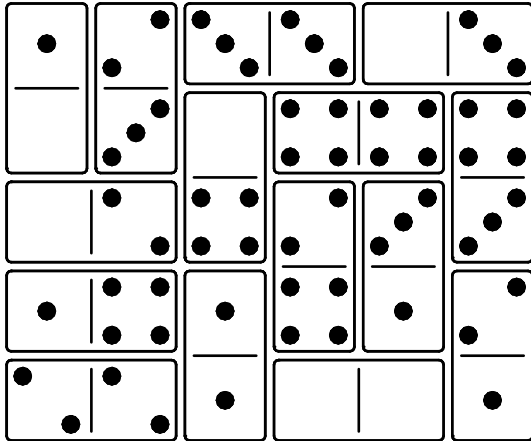
Solution 4



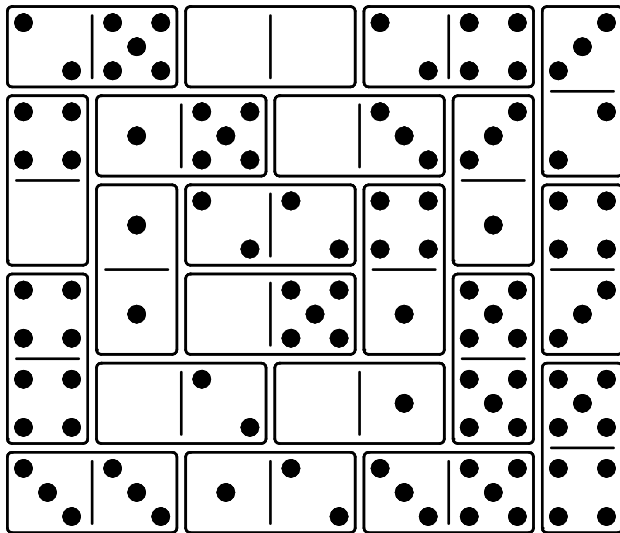
Solution 5



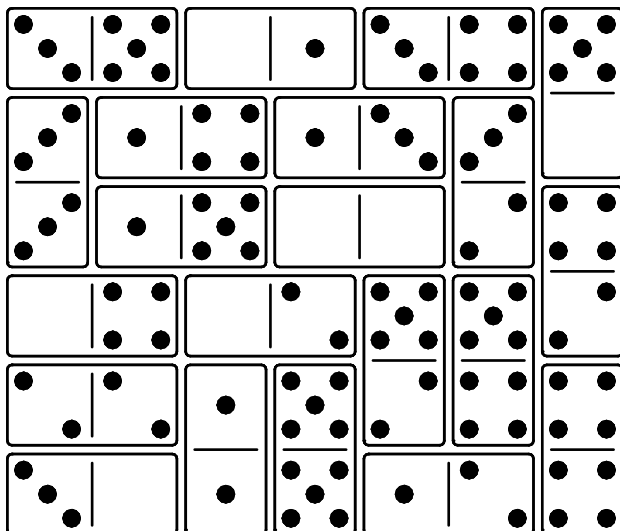
Solution 6



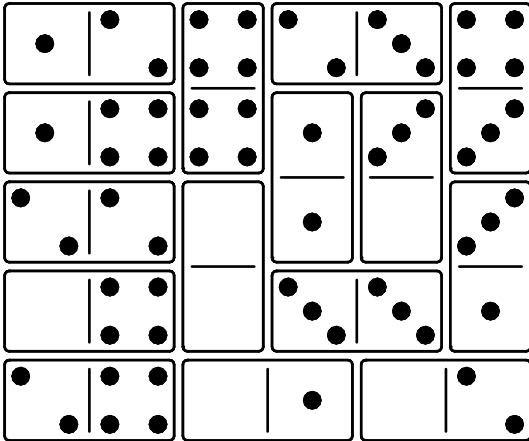
Solution 7



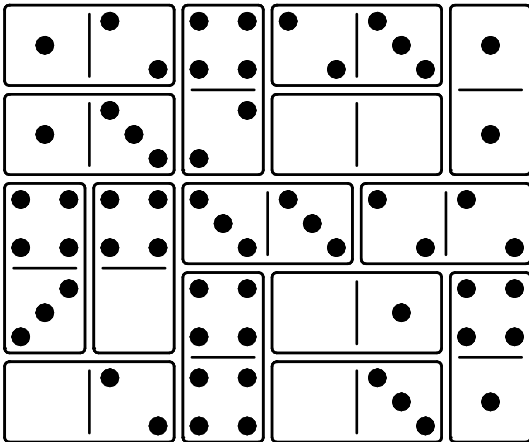
Solution 8



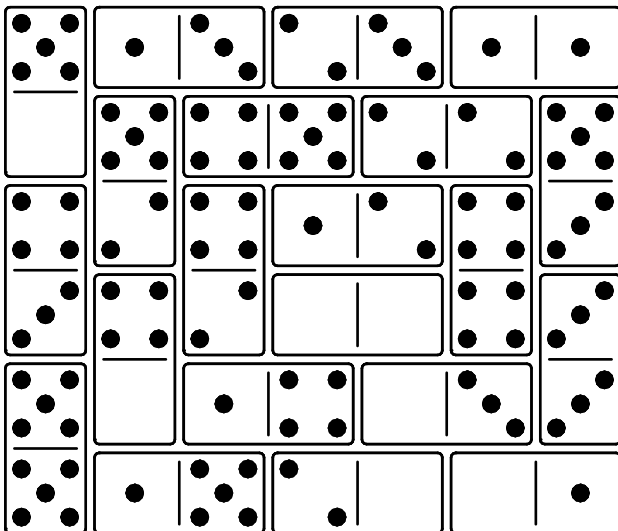
Solution 9



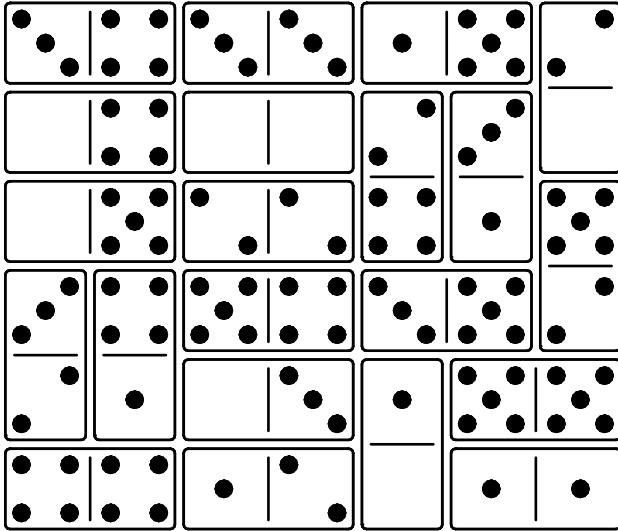
Solution 10



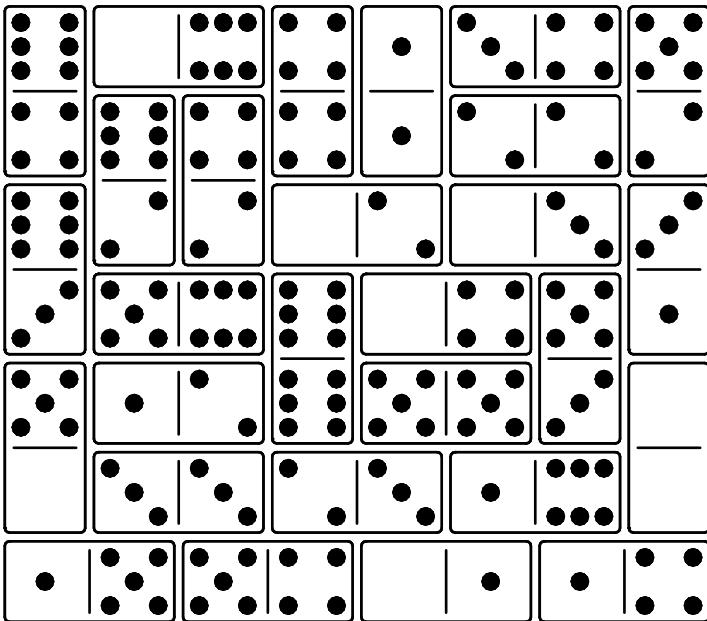
Solution 11



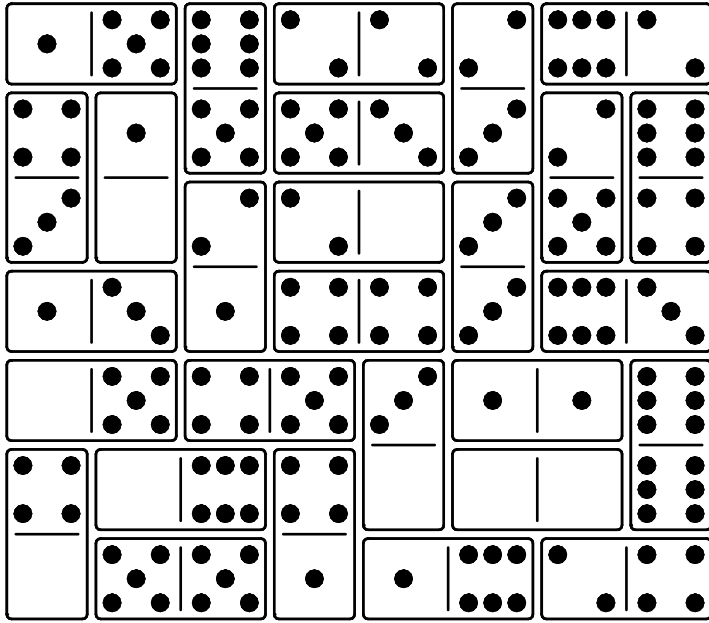
Solution 12



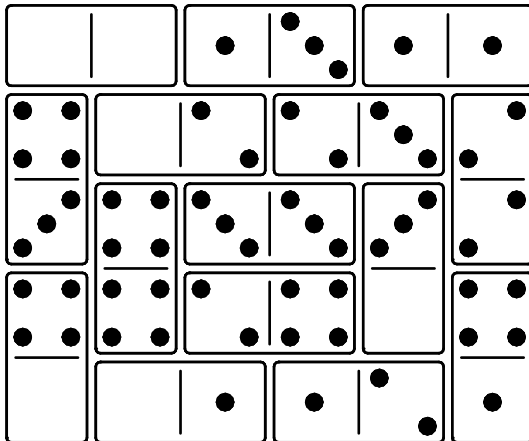
Solution 13



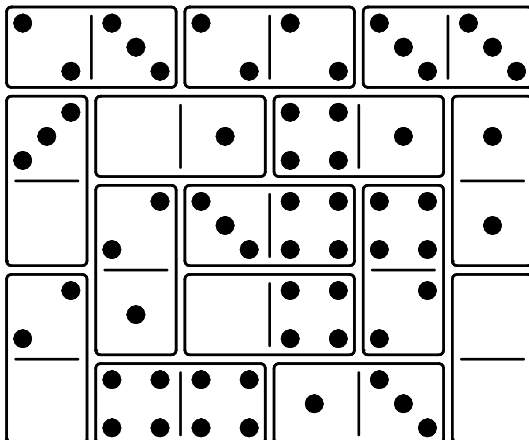
Solution 14



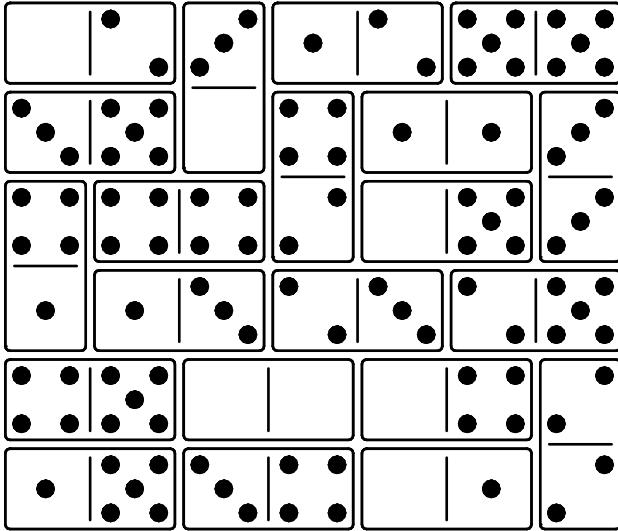
Solution 15



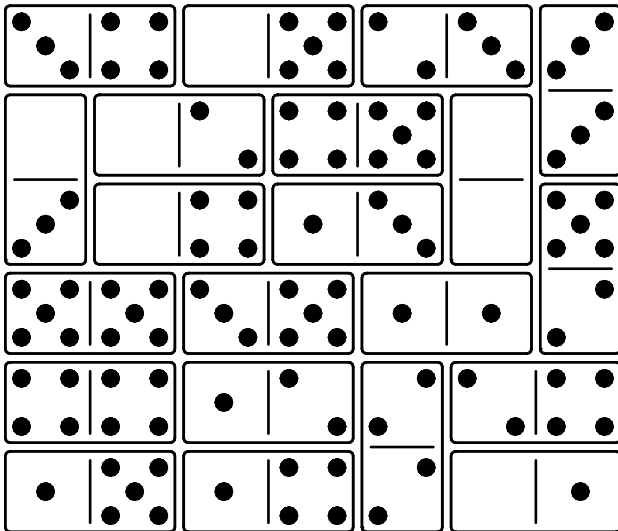
Solution 16



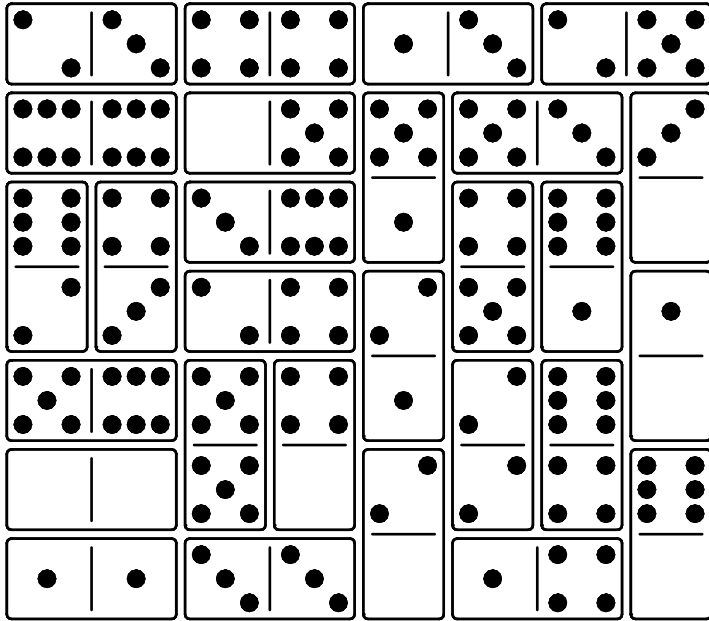
Solution 17



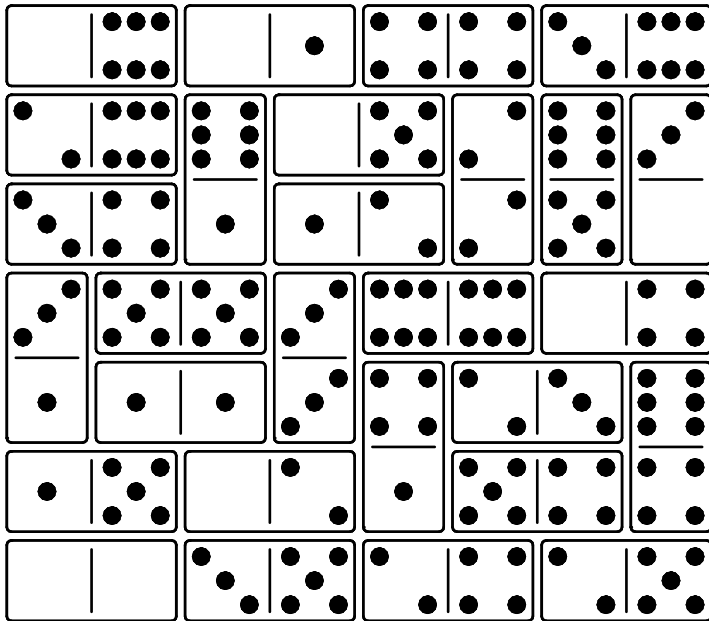
Solution 18



Solution 19



Solution 20



Contributing

Found some interesting problems to solve? Ideas to share? Get in touch at [donkirkby.github.com/donimoes](https://github.com/donkirkby/donimoes).

Capturing and Unmatched Donimoes, as well as Tetradominoes and Domino Finder are original puzzles and games designed by Don Kirkby.