

# Experiments in Progress

These are new puzzles that aren't finished yet. You can try them out and let me know what you think.

- **Domino Finder** is a game I designed where you have to find the domino without falling in a trap. (2-4 players, double-six dominoes, pawns, and two dice)
- **Dominosa** is the dominoes puzzle where you have to fit the set of dominoes into a grid of numbers.
- **Adding Donimoes** is a puzzle I designed where you add dominoes in the given order.

## 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 7 treasure dominoes. 3 players find 5, or 4 players find 4.

### *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 move your pawn around the board until you either find the treasure domino or you step in a trap (a blank square). If you want to move onto a face-down domino, 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 your turn is over. 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 your turn is over. Otherwise, keep moving around the board and flipping dominoes. When your turn is over, flip all the dominoes you revealed face down again, except for the one you're standing on. If you found the treasure, roll the two dice to choose a new treasure. If someone has already found that treasure domino, roll again. Play passes to the player on your right.

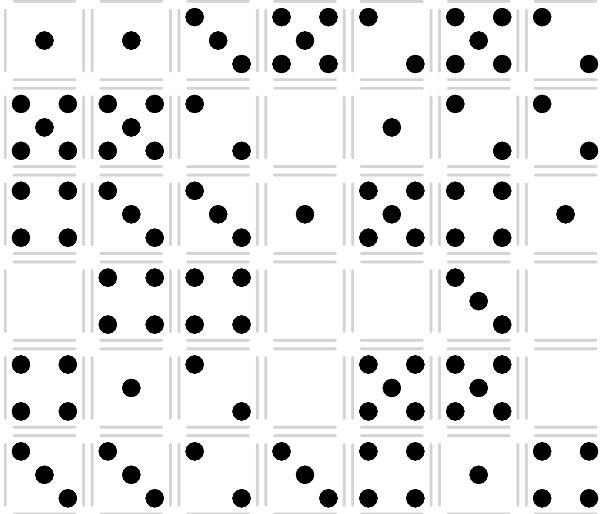
### *Winning*

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

## Dominosa

The domino puzzle I often see is called either Dominosa or Domino Solitaire. You start with a grid of numbers, and you have to lay the dominoes on them. It was invented by O.S. Adler in 1874. There's an interesting proof that this puzzle is NP-hard.

Reiner Knizia published some puzzles called Domino Knobelspass that are very similar to Dominosa.



## Adding Donimoes

The idea was to avoid the slow setup phase at the start of the other puzzles.

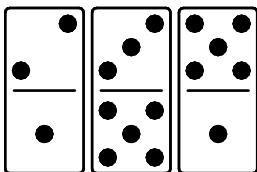
### Goal

The goal is to add all the dominoes from the queue onto the board. Each problem shows the queue of dominoes to add, from left to right.

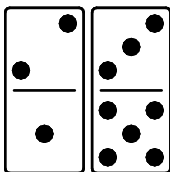
### Start

Take the two dominoes from the left end of the queue and place them on the board in the same position relative to each other.

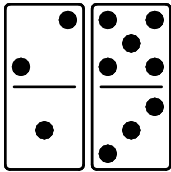
For example, if this is the queue:



Then the start position is like this:



Not like this:



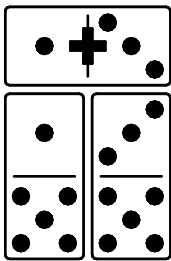
### **Moves**

There are only two ways a domino can move.

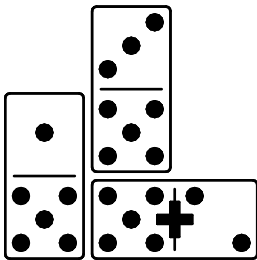
### **Adding**

The next domino from the queue can be added to the board if it matches at least two of the adjacent numbers on neighbouring dominoes. Those two adjacent numbers can match the two ends of the domino, or both match one end.

In this example, the 13 can be added, because it matches the 1 below and the 3 below.



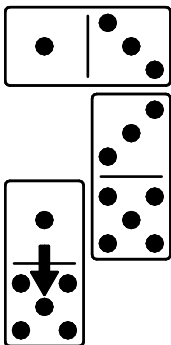
In this example, the 52 can be added, because it matches the 5 beside and the 5 above. The 52 could also be added in the vertical position.



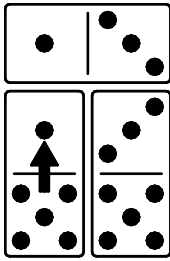
### **Sliding**

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, or it matches at least two of the adjacent numbers on neighbouring dominoes.

In this example, the left domino can move down, because the 1 and the 5 add to six.



The left domino can move back up, because the 1 matches the 1 above, and the 5 matches the 5 to the right.



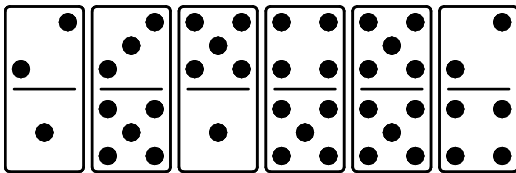
### ***Stay Connected***

All the dominoes on the board must stay in one connected group, you can't split the group after moving a domino.

### ***Problems***

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

#### ***Problem 1***



### **Adding Donimoes Solutions**

Here are the solutions to the Adding Donimoes problems. For each step, move the listed domino left, right, up, or down. Adding moves contain the domino numbers, (H)orizontal or (V)ertical direction, and the position to place it. The top left corner is 11, one space to the right is 21, and one space below is 12.

1. 36D, 23V21, 33D, 53V32, 25H21, 36D, 23D, 22H13, 33D, 53D, 22R

Donimoes is an original puzzle designed by Don Kirkby.