Several puzzles and games use the 4x4 grid and 16 domino disks, with 1 to 7 dots, each number in a different color:

PUZZLE I. This difficult puzzle is to place the 16 disks on the 4x4 grid so that all of the following conditions are met at the same time:

1. Every row and column sums to 16.
2. All 8 diagonals (including the 6 broken ones) sum to 16.
3. The nine 2x2 squares each sum to 16. There are three rows of three of these.
4. The four corners sum to 16.
5. The four corners of all four 3x3 squares sum to 16.
6. All 2x4 rectangles sum to 16.

Some mathematical background:
There are $(16!)/(4!)(3!)(3!)(2!)(2!) = 6054048000$ ways of filling the grid with the 16 tokens that will look different to the eye. If we don’t count reflections and rotations as different, this reduces to 756756000 different placements.

Our solution requirements make this puzzle one of what is called by Dame Kathleen Ollerenshaw a most-perfect magic square.

This remarkable lady published at age 87 (Most-Perfect Pandiagonal Magic Squares, The Institute of Mathematics and its Applications, 1998, Great Britain, University Press, Cambridge) a complete solution set for all $4k=n$ such squares. With her co-author, David Bree, this was the first complete enumeration of an infinite subset of magic squares. Of course she used the number set 0,1,2,...,15 instead of our 16 tokens.

For the 4x4 case, Dame Ollerenshaw found 48 basic solutions, not counting reflections or rotations. Hence our puzzle can have at most 48 basic solutions.
PUZZLE II. A slightly easier puzzle is to use the 16 tokens to complete a 4x4 traditional magic square that sums to 16 on every row, column, and the two main diagonals. It is known that there are 880 basic solutions to this puzzle.

PUZZLE III. An even easier puzzle is to place the pieces in a semimagic square. This kind of square traces back to Leonard Euler (1705-1783) and requires that only the rows and columns sum to the magic constant 16.

THE GAME – for two players.
The tokens are mixed in a concealed way, and the players each draw eight at random. The players alternate placing a token of their choice on the grid. They have previously decided to abide by the requirements of one of the three puzzles described above. Last one able to play a token is the winner.

Most-Perfect 4x4 is crafted in lasercut acrylic by Kadon Enterprises, Inc. ~ www.gamepuzzles.com

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