



Solution: Finding Squares

Teele

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This is a type of Nikoli logic puzzles known as Tasquare. A walkthrough of the logic is at the end of this solution. Highlighting the grid as described in the rules results in the following grid.

4	R	E	T	A	2	1	D	2	T
R	H	E	E	I	L		N	S	O
4	I	M	2	E	L	T	T	A	1
E	R	5	S	M	5	T	H	5	A
T	C	I	O	T	O	5	N	D	S
C	N	F	2	U		L	E	O	N
L	D		B	E	O	E	C	O	R
M	E	I	A	N	L	A	F	O	9
4	D	G	U	R	I	C	L	U	10
A	E	5	B	O	4	V	E	R	X

As suggested by the highlighting of letters, those cells are important. Reading the highlighted squares from left to right, top to bottom gives: “READ THE LETTERS THAT COULD BECOME A FOUR CLUE BOX”. (Many thanks to all the testers for coming up with a good wording.)

Naturally, all of the letters in the grid could be replaced by clue boxes. However, only a few of them would then need to have the number 4 (because the area of highlighted squares they are bordering is 4). 4 was chosen because it’s a square number and an important number for squares. Anyway, these cells are highlighted in blue below. Reading those letters gives the final answer: REMAINING.

4	R	E	T	A	2	1	D	2	T
R	H	E	E	I	L		N	S	O
4	I	M	2	E	L	T	T	A	1
E	R	5	S	M	5	T	H	5	A
T	C	I	O	T	O	5	N	D	S
C	N	F	2	U		L	E	O	N
L	D		B	E	O	E	C	O	R
M	E	I	A	N	L	A	F	O	9
4	D	G	U	R	I	C	L	U	10
A	E	5	B	O	4	V	E	R	X

Logic Puzzle Walkthrough:

For convenience, cells that are known to be unhighlighted will be colored pink and the highlighted cells will be colored yellow. To begin with, we know all the clue cells are not highlighted.

4	R	E	T	A	2	1	D	2	T
R	H	E	E	I	L		N	S	O
4	I	M	2	E	L	T	T	A	1
E	R	5	S	M	5	T	H	5	A
T	C	I	O	T	O	5	N	D	S
C	N	F	2	U		L	E	O	N
L	D		B	E	O	E	C	O	R
M	E	I	A	N	L	A	F	O	9
4	D	G	U	R	I	C	L	U	10
A	E	5	B	O	4	V	E	R	X

The region breakdown for some clues are straight forward:

- A clue of 1 must be adjacent to a 1x1 highlighted region
- A clue of 2 is adjacent to two 1x1 regions
- A clue of 5 is adjacent to a 2x2 region and 1x1 region

A clue of 4 is a little more interesting. The breakdown into squares could either be a single 2x2 region or four 1x1 regions. However, four 1x1 regions is not actually possible; putting a 1x1 block on each side would cut off the clue in the center from the other unhighlighted cells. Indeed, a clue can only ever be adjacent to highlighted squares on 3 sides and a clue of n can be broken down into the sum of at most 3 squares. For this reason, the 10 clue must be a 1x1 block and a 3x3 block. Finally, the cells adjacent to the highlighted, square region must not be highlighted or the region would no longer be square.

With this knowledge in hand, the 4-clue, first 2-clue, and the 1-clue in the top row, have their highlighted regions forced. Additionally, the 10-clue in the bottom right of the grid is also forced.

4	R	E	T	A	2	1	D	2	T
R	H	E	E	I	L		N	S	O
4	I	M	2	E	L	T	T	A	1
E	R	5	S	M	5	T	H	5	A
T	C	I	O	T	O	5	N	D	S
C	N	F	2	U		L	E	O	N
L	D		B	E	O	E	C	O	R
M	E	I	A	N	L	A	F	O	9
4	D	G	U	R	I	C	L	U	10
A	E	5	B	O	4	V	E	R	X

Recall that we can mark all the cells orthogonally adjacent to the highlighted regions as unhighlighted.

4	R	E	T	A	2	1	D	2	T
R	H	E	E	I	L		N	S	O
4	I	M	2	E	L	T	T	A	1
E	R	5	S	M	5	T	H	5	A
T	C	I	O	T	O	5	N	D	S
C	N	F	2	U		L	E	O	N
L	D		B	E	O	E	C	O	R
M	E	I	A	N	L	A	F	O	9
4	D	G	U	R	I	C	L	U	10
A	E	5	B	O	4	V	E	R	X

From this grid we can see that the bottom 4-clue has only one option. The 4-clue in the 3rd row has only one option. Additionally, the 2-clue in the 3rd row is forced as well. Finally, the farthest right 5-clue has only one location to be adjacent to a 2x2 highlighted square, even if the 1x1 region cannot currently be placed.

4	R	E	T	A	2	1	D	2	T
R	H	E	E	I	L		N	S	O
4	I	M	2	E	L	T	T	A	1
E	R	5	S	M	5	T	H	5	A
T	C	I	O	T	O	5	N	D	S
C	N	F	2	U		L	E	O	N
L	D		B	E	O	E	C	O	R
M	E	I	A	N	L	A	F	O	9
4	D	G	U	R	I	C	L	U	10
A	E	5	B	O	4	V	E	R	X

Once again looking at placement options, the last 4-clue is forced as is the nearby 5-clue. The 2-clue in the top right corner is forced to have the T highlighted. Finally, the central 5-clues have only the square with the 'O' available to place an adjacent 1x1 region. Don't forget that all non-highlighted cells must form a contiguous region. Thus the S in the top right corner must not be highlighted.

4	R	E	T	A	2	1	D	2	T
R	H	E	E	I	L		N	S	O
4	I	M	2	E	L	T	T	A	1
E	R	5	S	M	5	T	H	5	A
T	C	I	O	T	O	5	N	D	S
C	N	F	2	U		L	E	O	N
L	D		B	E	O	E	C	O	R
M	E	I	A	N	L	A	F	O	9
4	D	G	U	R	I	C	L	U	10
A	E	5	B	O	4	V	E	R	X

Finally the 2-clue and the 1-clue force the remainder of the cells to either be highlighted or not.

4	R	E	T	A	2	1	D	2	T
R	H	E	E	I	L		N	S	O
4	I	M	2	E	L	T	T	A	1
E	R	5	S	M	5	T	H	5	A
T	C	I	O	T	O	5	N	D	S
C	N	F	2	U		L	E	O	N
L	D		B	E	O	E	C	O	R
M	E	I	A	N	L	A	F	O	9
4	D	G	U	R	I	C	L	U	10
A	E	5	B	O	4	V	E	R	X

