A Camel's Tour – Solution Guide

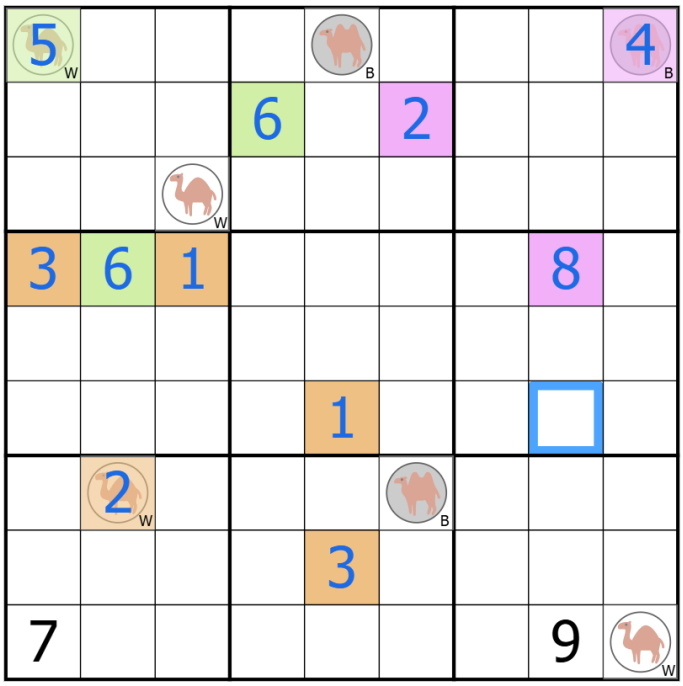
This is a full solution guide to my puzzle A Camel's Tour, and therefore spoilers are ahead.

Rules:

- Normal sudoku rules apply: Place the digits 1 to 9 once each in every row, column and 3x3 box
- Camel Kropki: A camel's move in fairy chess is 3 squares forward and 1 square to the side. A camel in a black circle indicates that all cells a camel's move away must be either double or half the digit in the circle. A camel in a white circle indicates that all cells a camel's move away must be consecutive with the digit in the circle.

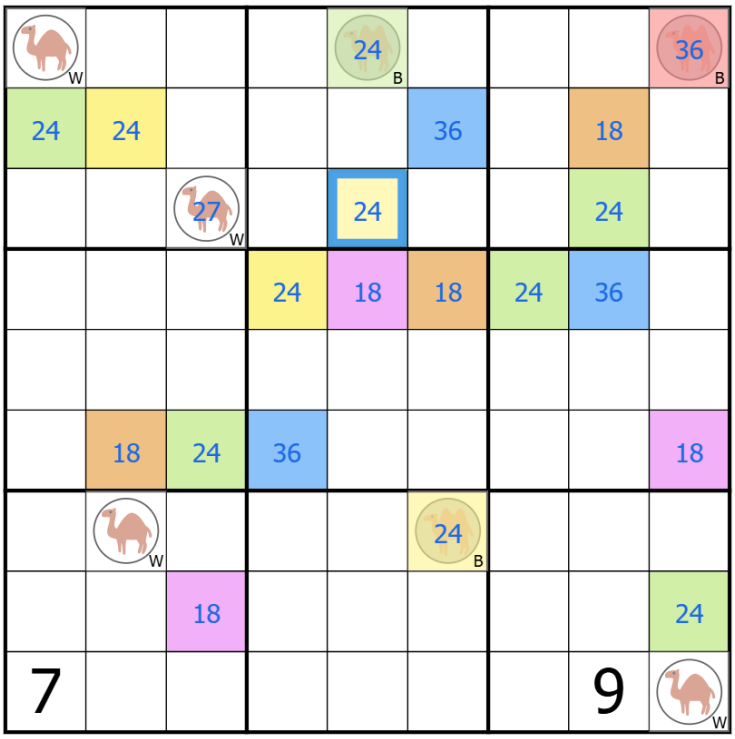
Camel Kropki example:

The black camel in R1C9 must be in a 1:2 ratio with R2C6 and R4C8. The white camel in R1C1 must be consecutive with R2C4 and R4C2 (and note these can be the same digit).

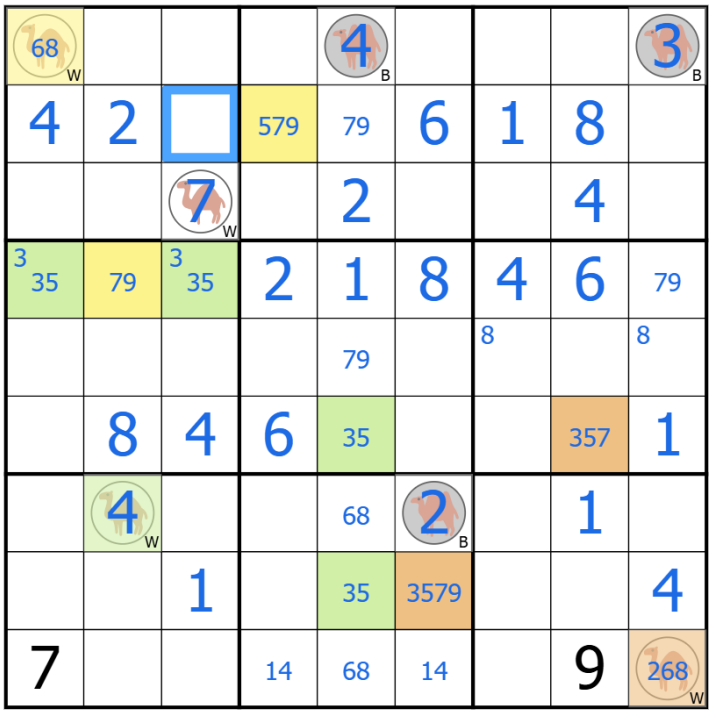


Solve Path

- Unless a black camel is in a corner, it has two camel neighbours that can see each other, hence the digit in the circle can only be 2 or 4, and its camel neighbours are from 1248. R1C5 and R7C6 create a 1248 quad in row 4. R1C9 also places a digit in row 4, so these are 36 pair
- We can ask where R1C5 goes in row 4. It is not in a 1:2 ratio with itself, nor in its own column, so it must be R4C7. Similarly R7C6 is R4C4
- The white camel in R3C3 sees digits from 36 and 18 which limits R4C4 to 27, and by using the camel restriction we can start to map individual digits around the grid using sudoku getting to this point



- R3C3 now sees both flavours of 24, so it is 7, and that resolves these pairs
- Remainder of row 4 can be pencilmarked and is from 3579. R1C1 has a camel neighbour R4C2, so R1C1 must be even, and only 68 are available
- This leaves a 3 definitely being seen by R7C2, so this cell is from 2 or 4, and only 4 is available, this maps some 35 pairs around the grid
- R9C9 sees R8C6 which is from 3579, so this is even, and only 268 are available
- We can also do a bit of sudoku on 1s



- We can consider whether R9C9 is 2. If it is, it places two 3s and breaks the 35 pair we just placed. (I think this step may be the one tanking the rating?)
- This places 2 in row 9 and column 9, displacing a pencilmarked 8 in box 6, so placing the 8
- This pencilmarks 8 into box 9. Now our 8 pencilmarks in boxes 8 and 9 line up, allowing us to place 8 in row 7
- This resolves R1C1. In additional we can place 3 in row 2 by sudoku and clean up the 35 pairs a bit

6 W	159	8	1579	4 B	1579	2579	257	3 B
4	2	3	57	79	6	1	8	57
159	159	7 W	8	2	3	569	4	56
3	7	5	2	1	8	4	6	9
19	169	69	34579	79	4579	8	357	2
29	8	4	6	35	579	357	57	1
59	4 W	69	3579	68	2 B	3567	1	8 5678
8	3569	1	3579	35	579	23567	2357	4
7	356	26	14	68	14	2356	9	8 68 W

- By sudoku we can find some pairs, triples, pointing etc. 9 in box 2, 2 in row 6, 7 in box 5 and eventually get to this point
- We can colour our 35 pairs to find a remote 35 pair looking at R8C8. In addition, this means that one of R8C6 or R6C8 is a 7, hence R8C8 is only a 2

6 W	59	8	1 157	4 B	1 157	2579	257	3 B
4	2	3	57	9	6	1	8	57
159	159	7 W	8	2	3	569	4	56
3	7	5	2	1	8	4	6	9
19	169	69	345	7	45	8	35	2
2	8	4	6	35	9	357	7 57	1
59	4 W	69	3579	68	2 B	3567	1	8 5678
8	3569	1	3579	35	7 57	23567	2357	4
7	35	2	14	68	14	35	9	8 68 W

- Puzzles collapses by sudoku, making R9C9 an 8, and R6C8 and R8C6 both 7s

6 W	9	8	7	4 B	1	2	5	3 B
4	2	3	5	9	6	1	8	7
5	1	7 W	8	2	3	9	4	6
3	7	5	2	1	8	4	6	9
1	6	9	4	7	5	8	3	2
2	8	4	6	3	9	5	7	1
9	4 W	6	3	8	2 B	7	1	5
8	3	1	9	5	7	6	2	4
7	5	2	1	6	4	3	9	8 W