Candyman – Full Solution Guide

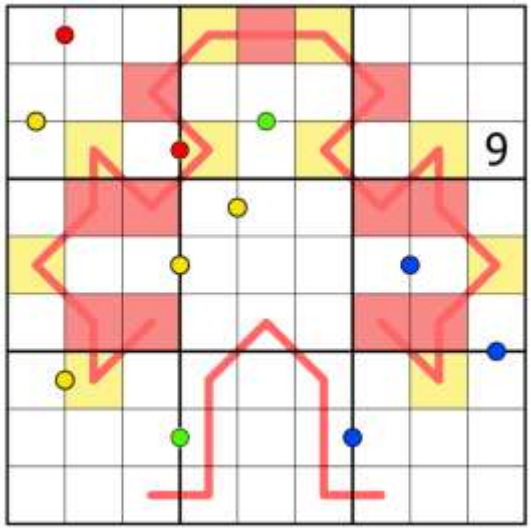
This is a full solution guide to my puzzle *Rank Up 20 - Palindromes*, and so spoilers are ahead.

Rules

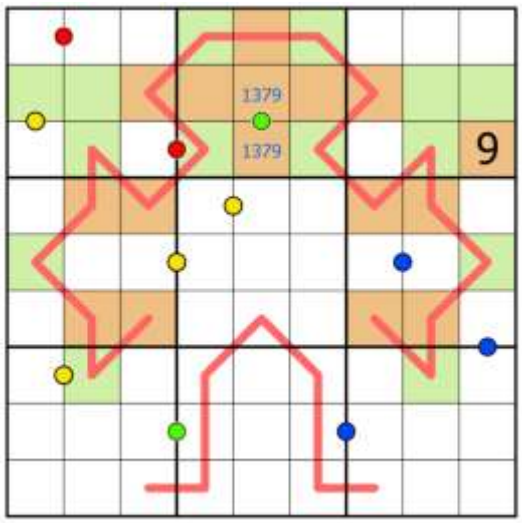
- Normal sudoku rules apply: Place the digits 1 to 9 once each in every row, column, and 3x3 box
- **Parity Line**: Adjacent cells along a red parity line must contain one odd and one even digit
- **Ambiguous XV/Kropki**: The grid is cluttered with 4 differently coloured dots. The 4 colours represent the 4 constraints of White Kropki, Black Kropki, V and X clues. Which colour represents which constraint must be deduced by the solver.
    - For reference: White Kropki: Digits are consecutive
    - Black Kropki: One digit is double the other
    - X: Digits sum to 10
    - V: Digits sum to 5

Solve Path

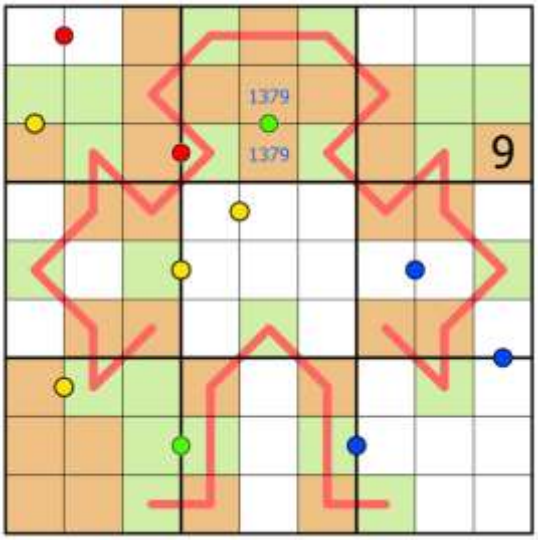
- Colouring the longer line we can see an issue in rows 4, 5, 6
- If red were even, then all four evens in row 5 would have to go into C456
- Hence red is odd



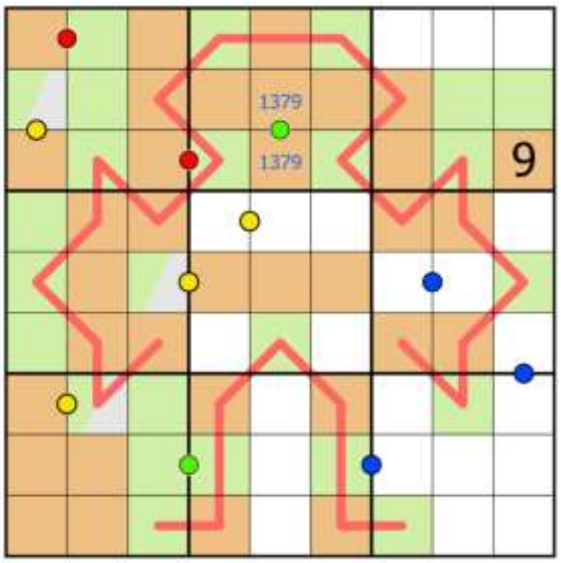
- Switching to our standard parity shades of Orange for Odd and greEN for evEN
- Can shades odds in box 2
- Green dot must be capable of having odds on both sides. The only domino that fulfils this is an X containing 19 or 37



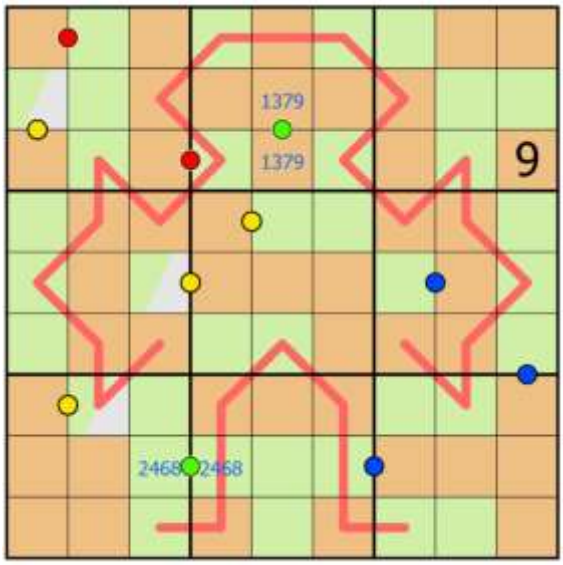
- Can shade odds in row 3
- Red dot in box 1 can't be double odd, so it contains one even, making R1C3 odd
- Completes shading in C3 then box 7



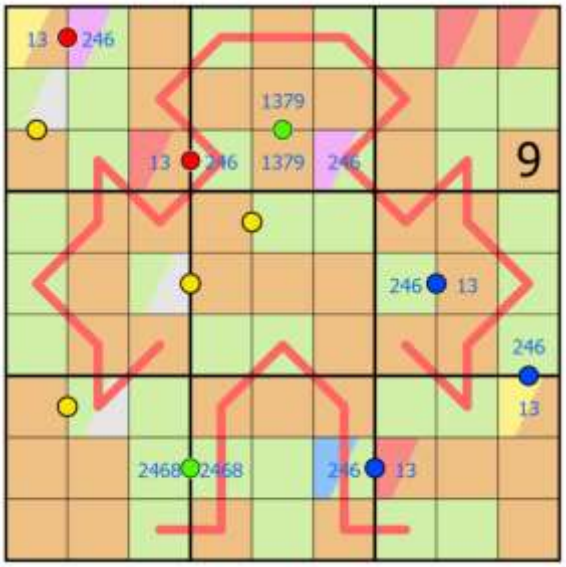
- Blue domino in R5 must contain at least one even, so the rest of R5 can be shaded with odds
- Completes shading in C2 and C1
- By sudoku R2C1 = R7C2. If yellow were a V or a blank dot, then the same digit would be placed in R3C1 and R7C1, hence yellow is a white dot
- White dots always have one odd and one even, allowing further shading



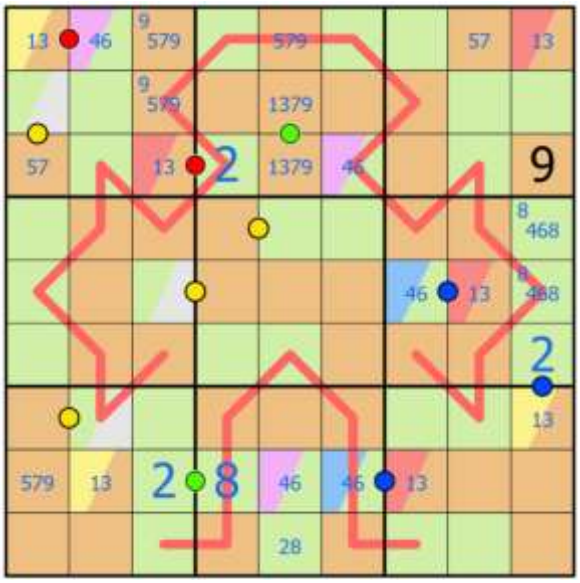
- Only way that R8C7 can be even is if blue is black kropki containing 24 or 48. However, R8 also contains an X which must be 46 or 28, and there is no way to fulfil both of these
- Hence R8C7 is odd, and that should allow the whole grid to be parity shaded



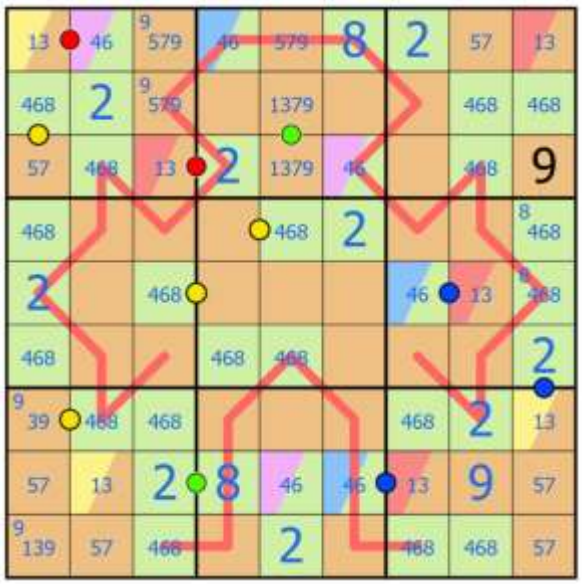
- Red dot and blue dot are black kropki and V in some order. The odd digit must be from 13, and the even digit is 24 for a V, and 26 for a black kropki
- Where is R8C7 (red) in box 3? It must go in row 1, making this different from R1C1 (yellow)
- Can map some red and yellow around the grid
- In addition, R1C2 in box 2 is in column 6, so it is different from R8C6



- If either blue or pink were 2, then it would set off a chain reaction that makes the other also a 2. I.e. Blue is 2 & blue dot is black kropki => red is 1 => yellow is 3 => pink is 2 etc.
- Makes blue and pink a 46 pair
- Makes green dot in R8 a 28 and places pink in R8
- By similar argument, R3C4 and R6C9 are both 2s
- Resolves 28 in R8 and places some more candidates around the grid

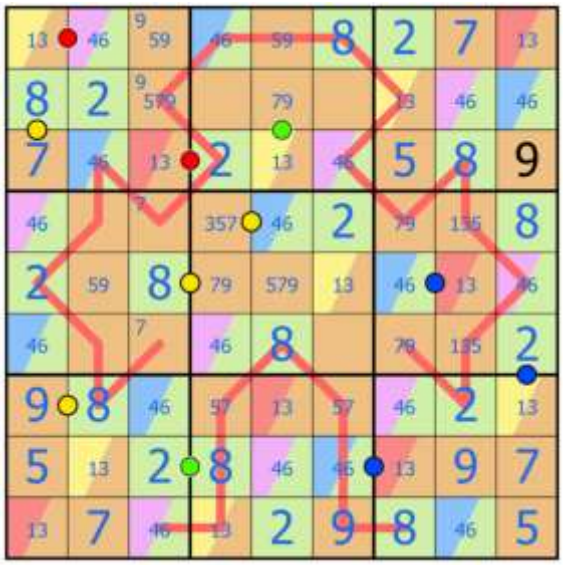


- Place all the 2s
- Place 9 in box 9
- Place 8 in box 2
- 57 pair in box 7 means yellow dot is from 39

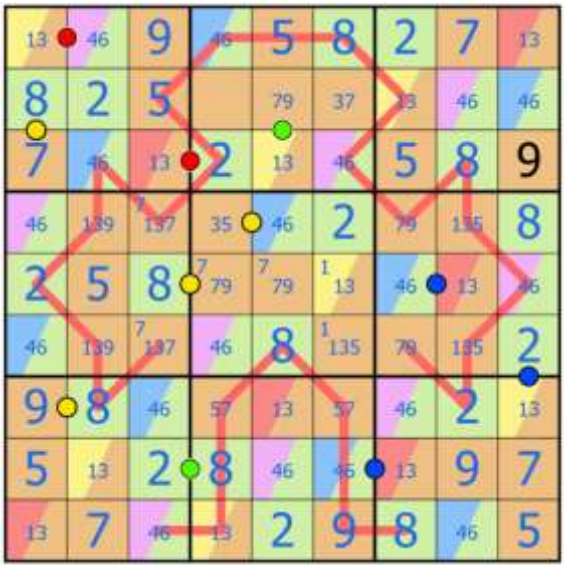


- R2C1 = R5C3 and these see both flavours of 46, so this is 8
- Allows placing of more 8s and 46s
- Also resolves yellow dots in C1

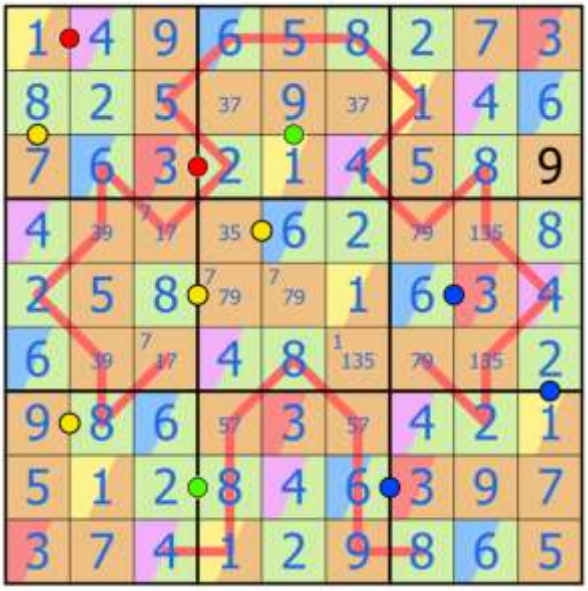
- R3C5 sees 79, making this yellow 13
- Places 5 in box 3
- 79 pair in box 6
- 7 is limited in box 4
- Marks 7 in row 5



- Creates 79 pair in box 5
- Places 5 in box 2
- 1s in box 5 point up C6
- Makes R2C6 from 37



- Makes green dot in box 2 a 19
- Yellow = 1, Red = 3
- By dots, pink = 4 and the red dot is a V, and blue = 6 and blue dot is black kropki



- R4C4 is a 5 by yellow dot