Y-Wing Strategy

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Y-Wing Strategy

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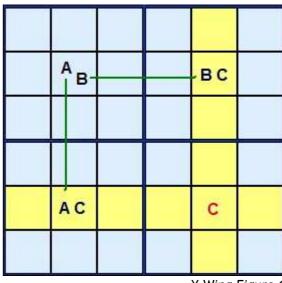
This is an excellent candidate eliminator. The name derives from the fact that it looks like an X-Wing - but with three corners, not four. The forth corner is where the candidate can be removed but it leads us to much more as we'll see in a minute.

Lets look at Figure 1 for the theory.

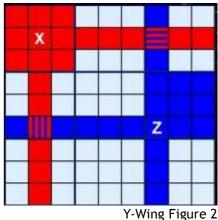
A, B and C are three different candidate numbers in a rectangular formation. Three of the corners have two candidates AC, AB and BC. The cell marked AB is the key. If the solution to that cell turns out to be A then C will definitely occur in the lower left corner. If AB turns out to be B then C is certain to occur in the top right corner. C is a complementary pair.

So whatever happens, C is certain in one of those two cells marked C. The red C can be 'seen' by both Cs - the cell is a confluence of both BC and AC. Its impossible for a C to live there and it can be removed.

In Figure 2 I'm demonstrating the sphere of influence two example cells have, marked red and blue. X can 'see' all the red cells, Z can 'see' all the blue ones. In this case there are two cells which overlap and these are 'seen' by both.



Y-Wing Figure 1



If our A, B and C are aligned more closely they can 'see' a great deal more cells than just the corner of the rectangle they make. In Figure 3 BC can see AB because they share the same box. AC can see AB because they share the same row. BC and AC can see all the cells marked with a red C where this Y-Wing can eliminate whatever number C is.

BC C C C	U	АВ	С		AC	
BC C C						
	вс			С	U	С

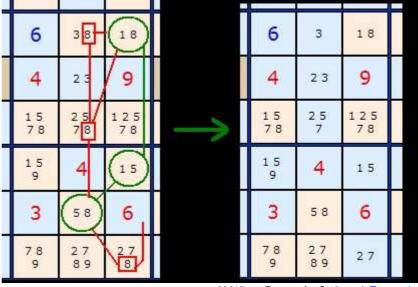
Y-Wing Figure 3

In this first example we have lots of 1s, 2s and 3s, but three cells marked in green rings - form a Y-Wing. The two 2s on the end form the pincer - one of them must be a 2. Therefore the 2 marked in a red box can be eliminated.

G 23 9 4 13 8 5 6 27 13 H 23 7 5 4 6 12 8 9 13 B 1 6 9 23 7 24 5 34		ý	5 0		8.00)		
	23	9	4	13	8	5	6	2 7	1 3 7
3 8 1 6 9 23 7 24 5 34	23	7	5	4	6	12	8	9	13
	8	1	6	9	2 3	7	2 4	5	3 4

Y-Wing Example 1: Load Example

The second example in Figure 5 shows three candidate 8s being eliminated from a single Y-Wing. The Y-Wing consists of 1/8, 1/5 and 5/8.



Y-Wing Example 2: Load Example



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