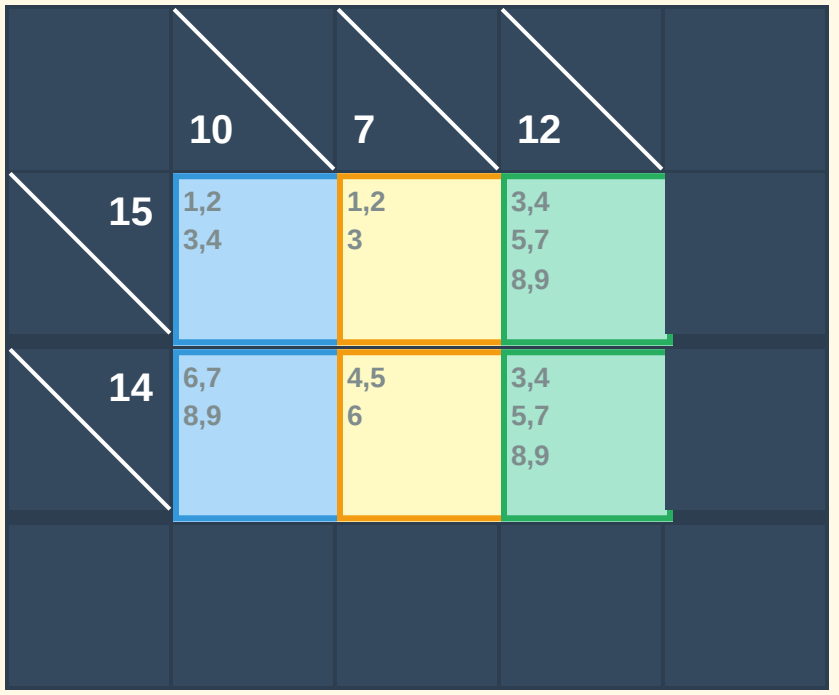
Diagram 5a: Analyzing Multiple Intersections (Part 1: Setting Up)

Advanced Technique: When you have multiple intersecting runs, don't solve them one at a time! Analyze all the intersections together—the constraints from multiple runs will help you narrow down possibilities much faster.

STEP 1: Write Pencil Marks Based on Each Run's Constraints

Start by figuring out what digits could go in each cell



Column 1 (Blue) - DOWN 10:
Possible: 1+9, 2+8, 3+7, 4+6
Top cell: 1, 2, 3, or 4
Bottom cell: must make 10

Column 2 (Yellow) - DOWN 7:
Possible: 1+6, 2+5, 3+4
Top cell: 1, 2, or 3
Bottom cell: must make 7

Column 3 (Green) - DOWN 12:
Possible: 3+9, 4+8, 5+7
Many options for both cells!

Key Insight: Notice how the pencil marks are based on *both* the across run AND the down run for each cell. For example, the top-left cell must work for ACROSS 15 *and* DOWN 10 simultaneously. That's why it's limited to {1, 2, 3, 4}.