What are pencil puzzles? Some for your perusal

**Easy as ABC** Put one A, one B, one C (and in the second puzzle below, one D) in each row and column such that the letters outside the grid refer to the first letter encountered from that direction.

2-D arrays & loops, data structures

**Clifferboom (Number tree)** Put the numbers 1-8 in the circles (4 is already given in this instance) such that each number is the sum of those connected to it from above.

Trees/graphs

**No-stopping maze** Enter on the left, stop and turn only when you run into a wall, exit at the right after the fewest number of turns.

Graph search

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**Slither Link (スリザーリンク) aka Fences**
Connect adjacent dots with horizontal and vertical lines to make a single loop; cells with numbers indicate the number of sides of that cell used by the loop.

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**Pathfinder** Count the number of different paths from Start (S) to Finish (F). You cannot use an intersection or a path segment more than once. Path segments with arrows can only be used in the indicated direction.

*Dynamic programming*

**Count Me In** How many times does the triangular shape below left appear in the figure below right, in any size, color, or orientation (rotated and/or reflected)?
Lijnenspel aka Line Game aka Eminent Domain aka Four Winds Draw horizontal and/or vertical lines from each number so that the sum of the lengths of the lines equals the number, and no lines cross.

Numerical Wheel Enter the numbers 1-9 (1-21 in the larger puzzle) in the circles such that each group of three numbers has the same sum and the given values on the arcs are the sum of the two numbers on either end of the arc. Data structures, backtracking

This one is really hard - might need to write some code to solve it! :-}
Skyscraper

Enter the numbers 1 to N once each in each row and column. These numbers represent the heights of buildings. The numbers around the diagram denote how many skyscrapers are visible from that direction: higher skyscrapers block lower ones (so, for example, the 3 at the left of the example can see buildings 2, 3 and 4). 2-D arrays & loops, backtracking

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Number Link

Connect each pair of numbers with a line that goes through the centers of cells, and does not intersect itself any other line. Graph search, GUIs

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Credits: Puzzle conceptis (to the best of our knowledge, if not lost in the mists of time): Braingeners (Easy as ABC, Number Tree, Lijnenspel, Skyscraper), Nikoli (Slither Link, Number Link), Thomas Snyder (Pathfinder), Czech Puzzle Team (Numerical Wheel). Puzzles written by: Zack Butler except Yuichi Saito/Nikoli (second Slither Link), Thomas Snyder (Pathfinder), Scott Kim/USPC (Count Me In), Uncredited/WPC2001 (Numerical Wheel), Bram de Laat (second Skyscraper), Ogawa Minoru/Nikoli (first Number Link)