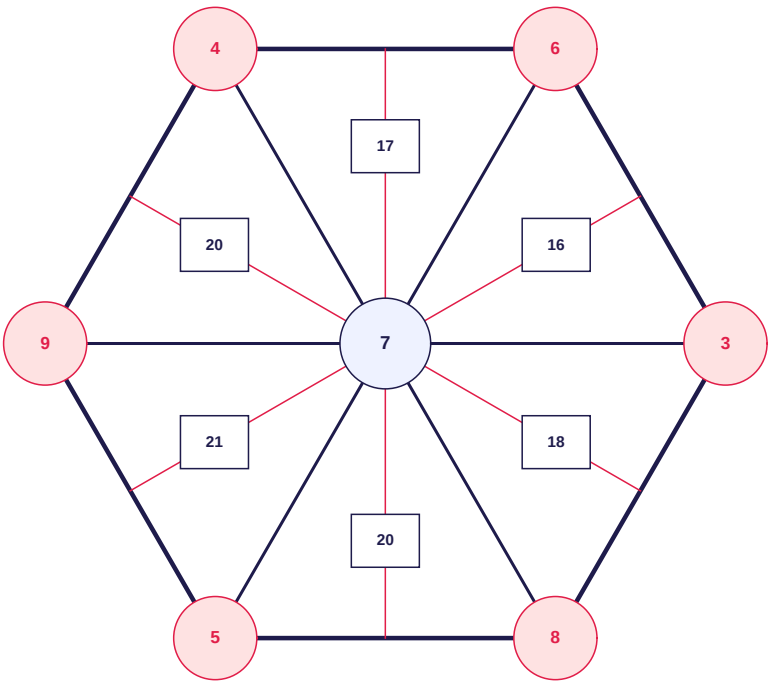
PLANAR GRAPH THEORY & GEOMETRIC TESSELLATION

TRIANGULAR GEOMETRY MATCH LOGIC PUZZLE GRID

Hexagonal Planar Tessellation: Interlocking Numbered Vertices, Edge Sums, and Polygon Laws

DIFFICULTY / SPEC
Standard US Letter
Bespoke Printable



TESSELLATION & GRAPH RULES

1. Hexagonal Planar Topology: The central hub vertex (7) connects to six peripheral vertices forming 6 triangular faces.

2. Face Sum Law: The sum of the three corner vertices of each triangle must equal the boxed target sum inside that triangle.

3. Shared Edge Continuity: Vertices shared between two adjacent triangles must satisfy the face sum equations in both simultaneously.

4. Permutation Constraint: Digits 1 through 9 are allocated across vertices without duplicate collisions.

TRIANGLE FACE AUDIT:

Face 1 (7 + 3 + 8 = 18): [ ] OK | Face 2 (7 + 8 + 5 = 20): [ ] OK

Face 3 (7 + 5 + 9 = 21): [ ] OK | Face 4 (7 + 9 + 4 = 20): [ ] OK

EULER'S PLANAR FORMULA & GEOMETRIC DEGREE PROOFS

Euler's Polyhedral Formula: Vertices (7) - Edges (12) + Faces (6) = 1 (Bounded Planar Embedding)

Center Degree Calculation: Hub vertex has degree d = 6 (connected to all outer vertices)

Peripheral Vertex Degree: Outer perimeter vertices have degree d = 3 (boundary conditions satisfied).

GEOMETER PROFILE

Mathematician: _____

Topology Guild: Planar Graph

Proof Status: Verified

GRAPH AUDIT

[ ] All 6 Faces Summed

[ ] 100% Shared Edges Valid

[ ] Zero Vertex Clashes

GEOMETRIC SCORE

Solving Time: _____ Minutes

Euler Invariance: [ ] YES

Topology Rank: * * * * *

PLANAR GRAPH FACTORIZATION & TESSELLATION PROOF SCRATCHPAD:

CHALLENGE RATING: PLANAR GRAPH GRANDMASTER