CQE n=1→n=5 Falsifier Kit (Notebook Version)

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Purpose (what would falsify the claim)

This kit specifies a hand■run procedure on a 4×4 board that makes four concrete, falsifiable predictions:

• F1 — For n=5, exactly eight inequivalent legal insertion classes exist (no fewer, no more) under the stated rules; one re■palindromes, seven stabilize as non■palindromes.

• F2 — For n=4, regardless of start (within the rules), the layout canonicalizes to a single palindromic rest up to rotation/flip (idempotent on replay).

• F3 — Replay determinism: repeating the same sequence of legal choices yields an identical end layout and log hash.

• F4 — Rotation/flip equivalence: rotating or flipping any n=5 outcome maps it within the same class orbit; none escape the octad.

Materials

Paper, pencil, eraser, this packet's templates (board, step log, n=5 worksheet). No software.

The Board & Mirrors

Use a 4×4 grid with two mirror lines: a horizontal line between rows B and C, and a vertical line between columns 2 and 3. Top and bottom halves are mirrored. A placement and its mirror mate count as one move.

Four Checks per Move (the only rules)

Check	Meaning	How to pass
Local sense (Even/Odd)	Don't create new conflicts with already■filled neighbors (up/down/left/right).	Count neighbor conflicts (mismatches). Prefer moves that red
Mirror	Keep the picture mirror■balanced across both lines.	If your trial breaks symmetry, try the mirrored spot. Choose th
Tick (pace)	Only commit on allowed step numbers (prevents oscillation).	Use remainders 0, 5, or 8 modulo 13. If not on an allowed tic
Path (little counters)	Three tiny counters wrap every 2, 4, and 8 moves to keep a consistent beat.	Increment (mod 2/4/8) each move. Reject moves that would

Defect score (tie■breaker): +1 per neighbor conflict created, +1 if mirror must be flipped to fix, +1 if counters would need a nudge. Pick lower.

Protocol A — n=1..4 (reach the palindromic rest)

• Seed (n=1): place "1" as a mirrored pair straddling a mirror line (e.g., B2 & C3). Log counters as 0,0,0.

• n=2: place "2" adjacent to the 1's with its mirror mate; commit only on allowed ticks; pick the lower■defect option.

• n=3: same process—trial, score, mirror if needed; commit on a legal tick; log counters (mod 2/4/8).

• n=4: continue until no local repair lowers the defect score and mirror holds without flips; mark Snap=yes. Test idempotence by attempting one more repair—nothing should change.

Protocol B — n=5 (classify the eight insertion types)

• Make 16 light copies (or traces) of your n=4 rest picture.

• On each copy, insert a single “5” into a different empty square. If needed, allow one local repair (mirror or a single neighbor swap) so all four checks pass.

• For each outcome, note whether the result is palindromic again (yes/no).

• Group the 16 outcomes by rotation/flip look■alikes; you must end with exactly eight classes. Label which class re■palindromes (there will be one).

What falsifies the claim (decision table)

Observation	Verdict
<8 or >8 classes at n=5 (after grouping by rotation/flip)	Falsifies F1
n=4 does not settle to a unique palindromic rest (up to rotation/flip)	Falsifies F2
Repeating the same choices does not reproduce the same end state/log hash	Falsifies F3
Rotation/flip sends an n=5 outcome outside its class orbit	Falsifies F4

How to log (hash for replay determinism)

Each committed move: write Step#, spot(s) filled, which checks passed, defect score, and your three counters (mod 2/4/8). At the end, write a short hash (e.g., last 6 chars of SHA1) of your step list. Repeat the run—hashes should match.

One■page Quick Sheet (summary you can hand to a colleague)

• Draw 4×4 with both mirror lines. Four checks per move: Local sense, Mirror, Tick (0/5/8 mod 13), Path (wrap 2/4/8).

• n=1..4: add 1,2,3,4 by mirrored placements; prefer lower■defect; commit only on allowed ticks; reach palindromic rest and mark Snap.

• n=5: make 16 trials (one per empty square), allow one local repair, group by rotation/flip; you must get 8 classes; exactly one re■palindromes.

• Falsifiers: wrong class count; no unique n=4 rest; replay hash drift; rotation/flip escaping the class orbit.

Board Reference (4×4 with mirror lines)

Use this diagram to mark your first placements (n=1..4). The dashed lines are the mirrors.