Results explanation (using figures)

Time results
- The performance plots (performance_metric1.png, performance_metric2.png, performance_metric3.png; algo1_performa
- Representative stats (see ANALYSIS.txt and time_memory_analysis.png):
  ? Algo1: avg 284,566 generated / 52,493 expanded; solved 11/16.
  ? Algo2: avg 708,516 generated / 653,439 expanded; solved 16/16; impassable3 ~10.3M expanded (~1011 s).
  ? Algo3: avg 12,167 generated / 11,917 expanded; solved 16/16; impassable3 ~155K expanded (~68.8 s).

Space results
- The space plots (space_algorithm_1.png, space_algorithm_2.png, space_algorithm_3.png, space_comparative.png) sho
- Illustrative numbers (ANALYSIS.txt): impassable3 ? Algo2 ~358 MB auxiliary + large queue; Algo3 ~5 MB total (no persis

Q1. Which time complexity growth does the data show, and does it match theory?
- Algorithm 1: Data shows exponential?like growth in time; fails on harder puzzles. Matches theory.
- Algorithm 2: Data scales roughly linearly with the number of unique states; completes all puzzles. Matches theory.
- Algorithm 3: Data shows markedly reduced growth (solutions found at small widths), far below exploring the full space. M

Q2. What?s the memory (space) growth of Algorithms 2 and 3, and do they decrease the growth rate vs Algorithm 1?
- Algorithm 2: Memory grows with the count of unique states because it stores a visited?set (radix tree). This reduces grow
- Algorithm 3: Memory is bounded by the current width?s working set and freed between iterations, yielding substantially sm