AI Search Strategy Questions

Problem: Graph Coloring

Generated from Knowledge Graph Analysis

This document contains 1 instance(s) of the Graph Coloring problem with questions about the most appropriate solving strategies. Each instance includes visualizations and detailed answers based on knowledge graph analysis.

Instance 1:

Vertices: 7, **Colors Available:** 3, **Edges:** 8

Graph Edges:
(0, 1), (1, 3), (1, 4), (1, 6), (2, 6), (3, 5), (4, 5), (4, 6)

Question: For the Graph Coloring problem and the given instance, which is the most appropriate solving strategy among those mentioned in the course (BFS, DFS, UCS, A*, GBFS, IDA*, Hill Climbing, Simulated Annealing)?

Answer:

Best Strategy: DFS
✓ *Complete - finds solution if one exists* | ✓ *DFS/Backtracking perfect for CSP*

Properties: Optimal, Complete

Alternative Strategies:

• **Backtracking**: For small instances

• **UCS**: When actions have varying costs

Recommended Heuristics: Degree Heuristic, Minimum Remaining Values