

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: 6, **Colors Available:** 4, **Edges:** 7

Graph Edges:

(0, 1), (2, 5), (3, 4), (3, 5), (1, 2), (2, 3), (4, 5)

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 medium instances
- **UCS:** When actions have varying costs

Recommended Heuristics: Degree Heuristic, Minimum Remaining Values