

# 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