CS 461 Homework 1 Search Algorithms

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# 1 Uninformed Search

#### Depth-first search

|  |  |
| --- | --- |
| **State** | **Path** |
| Start | Start |
| A | Start > A |
| C | Start > A > C |
| Goal | Start > A > C > Goal |
| D | Start > A > C > D |
| B | Start > B |

#### Breadth-first search

|  |  |
| --- | --- |
| **State** | **Path** |
| Start | Start |
| A | Start > A |
| B | Start > B |
| D | Start > D |
| C | Start > A > C |
| Goal | Start > D > Goal |

#### Uniform cost search

|  |  |  |
| --- | --- | --- |
| **State** | **Path** | **Cost** |
| Start | Start | 0 |
| A | Start > A | 2 |
| B | Start > B | 3 |
| D | Start > D | 5 |
| C | Start > A > C | 6 |
| Goal | Start > A > C > Goal | 8 |

# A diagram of a graph Description automatically generated2 Informed Search

#### Select all boxes that describe the given heuristic values. If you think they are not admissible and/or consistent, give a counterexample to show it.

Consistent and admissible (Consistency implies admissibility)

#### Given the above heuristics, what is the order in which the states are going to be expanded, assuming we run a greedy graph search with the heuristic values provided?