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CECS 451

Assignment 3

3.14

1. False. There is a slight possibility that Depth First Search will expand fewer nodes than A\* if Depth First Search immediately finds the target without having to backtrack
2. True. If Breadth First Search is complete, then the cost of steps is irrelevant, since Breadth First Search being complete only implies that a solution will be found if it exists

3.25

When w = 0 the evaluation function is f(n) = 2g(n), which is a uninformed best first search. When w = 0, the evaluation function is f(n) = g(n) + h(n), which is an A\* search. When w = 2, the evaluation function is f(n) = 2h(n) which is a greedy best first search

4.1

a. A local beam search with k = 1 is just a Hill Climbing search

d. Simulated annealing where T always equals infinity is just a random walk

5.3

a. Untitled picture.png Machine generated alternative text:
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ad 
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cc 
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Ink Drawings
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b. We can infer that each right child of the root has a lower and upper bound. The value of each node will be the shortest path from the root to goal.

c.

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