1

Heuristics should not overestimate the actual shortest remaining path. h(A) > 5 and h(C) > 2. These heuristics are not admissible, since they do in fact overestimate the actual shortest remaining path.

2

search algorith	path found	cost
A*	s,b,g	9
uniform cost	s,a,b,c	7
greedy best	s,b,g	9

A*

expanded	frontier(g,h,f)
s	a(2,10,12),b(1,9,10)
b	a(2,10,12),g(10,0,10)
g	

uniform cost:

expanded	frontier(g)
s	a(2),b(4)
a	b(4),c(5)
b	c(5),g(9)
c	g(7)

greedy best:

expanded	frontier(h)
s	a(10),b(5)
b	a(10),g(0)
g	

Since the heuristics are not admissible, the informed search algorithms, A* and greedy best, will not be optimal. Uniform cost search is not always optimal since it does not have heuristics, but got lucky this time. The informed algorithms picked node B rather than A, since h(A) is not admissible, and therefore higher than h(B), when it really should have been the opposite. This lead

them down the wrong path from the beginning.