# Part 1 Written Responses

## Question 1:

1. The goal of a heuristic when evaluating game states is to provide an estimate of how benificial the evaluated state is to the maximizing player so that future states need not be evaluated. Meanwhile, heuristics for A\* search are used to identify which nodes should be expanded first. While a game state heuristics goal is to most accurately capture the “value” of a state, an A\* heuristic wants to approach the true value of the distance to the goal *without exceeding that value.* As a direct consequence of these differences, while a game state heuristic that cannot ensure that the relative value of two states is correct will likely perform quite poorly, a A\* heuristic that does not do this will still generate an optimal solution assuming it is still valid, albeit slower.