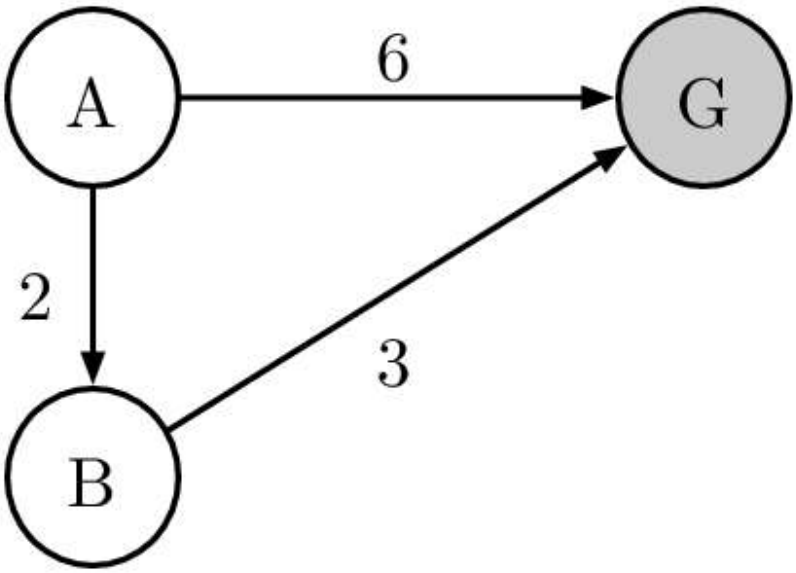
Q2: Search: Heuristic Function Properties

Problem 2: Search: Heuristic Function Properties

For the following questions, consider the search problem shown in the figure below. It has only three states, and three directed edges. A is the start node and G is the goal node. In the table below, four different heuristic functions are defined, numbered I through IV.



	$h(A)$	$h(B)$	$h(G)$
I	4	1	0
II	5	4	0
III	4	3	0
IV	5	2	0

Part 1: Admissibility and Consistency

Part 1.1

0.0/2.0 points (ungraded)

For each heuristic function below, check the corresponding box if it is an *admissible* heuristic.

- [x] I ✔
- [ ] II
- [x] III ✔
- [x] IV ✔

Submit You have used 0 of 1 attempt

Answers are displayed within the problem

Part 1.2

0.0/2.0 points (ungraded)

For each heuristic function below, check the corresponding box if it is a *consistent* heuristic.

- [ ] I
- [ ] II
- [x] III ✔
- [ ] IV

Submit You have used 0 of 1 attempt

Answers are displayed within the problem

Part 2: Function Domination

Recall that *domination* has a specific meaning when talking about heuristic functions.

Part 2.1

0.0/1.0 point (ungraded)
Which one of the following statements about the relationship between heuristic functions III and IV is true?

- Heuristic function III dominates IV.
- Heuristic function IV dominates III.
- Heuristic functions III and IV have no dominance relationship. ✔

Submit You have used 0 of 1 attempt

Answers are displayed within the problem

Part 2.2

0.0/1.0 point (ungraded)
Which one of the following statements about the relationship between heuristic functions I and IV is true?

- Heuristic function I dominates IV.
- Heuristic function IV dominates I. ✔

- Heuristic functions I and IV have no dominance relationship.

Submit

You have used 0 of 1 attempt

Answers are displayed within the problem