Quiz 1: The Bellman Equations

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2/2 points (ungraded)

Part 1

Which of the following is the value iteration update equation?

- $V_{k+1}(s) \leftarrow \max_a \sum_{s'} T(s,a,s')\left[R(s,a,s') + \gamma V_k(s')\right]$ ✔
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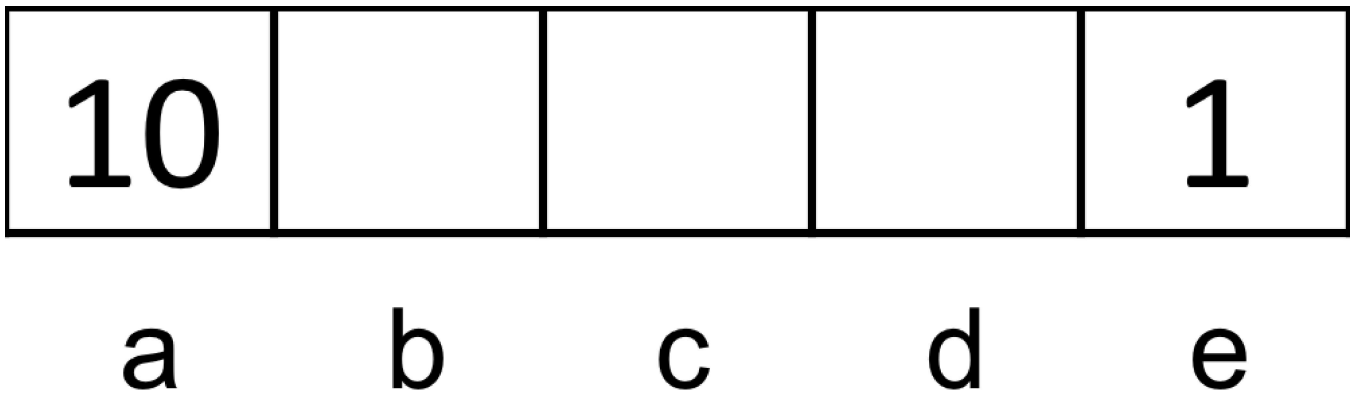
Part 2

Consider the same gridworld (shown below) as in many of the quizzes from the previous lecture, where Left and Right actions are successful 100% of the time.

Specifically, the available actions in each state are to move to the neighboring grid squares. From state a, there is also an exit action available, which results in going to the terminal state and collecting a reward of 10. Similarly, in state e, the reward for the exit action is 1. Exit actions are successful 100% of the time.



Let the discount factor $\gamma = 1$. After how many iterations of value iteration will the value function have converged? Keep in mind that the reward only gets obtained while taking the exit action.

5 ✔

Submit

✔ Correct (2/2 points)

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