hw3_games_q5.2_properties_of_nonzero_sum_games

Question 5.2: Properties of Non-Zero-Sum Games

6/6 points (ungraded)

In this problem, you will again consider the non-zero-sum generalization, in which the sum of the two players' utilities are not necessarily zero. The leaf utilities are now written as pairs (U_A, U_B). In this generalized setting, A seeks to maximize U_A, the first component, while B seeks to maximize U_B, the second component.

Assume that your generalization of the minimax algorithm calculates a value (U_A, U_B) for the root of the tree. Assume no utility value for A or for B appears more than once in the terminal nodes (this means there will be no need for tie-breaking). Which of the following statements are true?

- [x] Assuming A and B both play optimally, player A's outcome is guaranteed to be exactly U_A.
- [x] Assuming A and B both play optimally, player B's outcome is guaranteed to be exactly U_B.
- [ ] Assuming B plays sub-optimally (but A plays optimally), A's outcome is guaranteed to be at least U_A.

✔

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✔ Correct (6/6 points)