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OPTIMAL STOPPING STRATEGIES IN THE GAME “THE PRICE IS RIGHT”

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The popular TV show “The Price Is Right” is an attractive source of modeling the strategic behavior in a competitive environment for a specific reward. In this study, the structure of the show is used as a basis for several game-theoretic settings. We consider a noncooperative optimal stopping game for a finite number of players. Each player earns points by observing the sums of independent random variables uniformly distributed on the unit interval. At each step, the player must decide whether to stop or continue the game. The winner is the player with the maximal score not exceeding unity. If the scores of all players exceed this limit, the winner is the player with the lowest score. We characterize the optimal strategies of the players in the multi-step version of the game with complete information about the scores of the previous players. We also compare the optimal strategies and payoffs of the players in the games with complete information and with no information. The notion of information price is introduced.

Keywords: optimal stopping, n -person game, Nash equilibrium, threshold strategy, complete information, Showcase Showdown.

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