RELATIONSHIPS BETWEEN SUBSET AND ONE-POINT SOLUTIONS IN COOPERATIVE GAME THEORY: A WORKER COMPENSATION APPLICATION

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ABSTRACT

Cooperative games are most frequently used to divide results among members who join in a cooperative situation. We've done a thorough analysis of the subset and one-point solutions as a result of the wide range of options provided by this method. In our analysis, we especially considered four subset solutions and six one- point solutions and examined their relationships. The large number of solutions we have taken for investigation at once is what distinguishes this study. We have also compared and discussed these solutions to a problem that has to do with rewarding workers. The analysis of this topic is different since there are four players instead of only two or three as in previous research. In order to make the obtained results as clear as possible, we have also constructed a schematic representation of the problem's solutions. We conclude that in order to allocate the results fairly, a thorough analysis of as many potential solutions as feasible should be made before a compromise is reached between the parties.

Keywords: Cooperative game, Subset solution, One-point solution, The core, The Nucleolus, The Shapley Value.