

Homework 4

CSCE689 Algorithmic Game Theory

Due: December 6, 2023, 11:59 PM

1. (5 points.) Formally prove Corollary 11.16, using the First and Second Welfare Theorems. That is, that a Walrasian equilibrium exists in a combinatorial-auction environment if and only if the corresponding linear programming relaxation admits an integral optimal solution.
2. (5 points.) Show that any valuation function on a set of m items can be represented by an XOR bid of size 2^m .
3. (10 points.) AGT, Exercise 11.1.
4. (10 points.) AGT, Exercise 11.2.
5. (10 points.) AGT, Exercise 11.6.