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SS 2011

Exercises for Algorithmic Game Theory

<http://www.mpi-inf.mpg.de/departments/d1/teaching/ss11/AGT/>

Assignment 10

Deadline: Mo 7.1.2013

All exercises concern the local connection game discussed in class on December 17, 2012. See Chapter 19.2 of the book.

Exercise 1 *Characterization*

Give a complete characterization of all optimal networks for the local connection game for $\alpha = 2$.

Exercise 2 *Long path*

Show that a sufficiently long path cannot be a Nash equilibrium of this game.

Exercise 3 *Not a star*

Construct a Nash equilibrium that is not a star for $\alpha > 2$.

Exercise 4 *Large α*

Show that when $\alpha > n^2$, all Nash equilibria of the local connection game are trees and the price of anarchy is bounded by a constant.