

Assignment 3: Algorithmic Game Theory

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1. Prove that as the degree p of the cost function in the bottom link of Pigou's network goes to ∞ , the price of anarchy of Pigou's network tends to ∞ as $\frac{p}{\ln p}$.

[5 Marks]

2. Prove that in a selfish load balancing game with 3 tasks and 2 identical machines, the PoA with respect to PSNE is 1.

[5 Marks]