COMP323 - Introduction to Computational Game Theory

Tutorial 4 - Questions

Problem 1. Suppose we have 3 identical machines (each with speed 1) and 6 tasks (players), with weights $w_1 = w_2 = w_3 = 1$, $w_4 = w_5 = w_6 = 1/3$. Compute the Price of Anarchy for this instance of the load balancing game, by considering only pure strategies for the players.

Problem 2. Consider the following instance of the load balancing game:

- m identical machines $M_1, M_2, \ldots, M_m$ (all of speed 1),

- n tasks $w_1, w_2, \ldots, w_n$.

Consider also the mixed strategy profile A where each of the tasks is assigned to all machines equiprobably (i.e. with probability $1/m$). Is A a Nash equilibrium?