Department of Mathematical Sciences
CARNEGIE MELLON UNIVERSITY

OPERATIONS RESEARCH II 21-393

Homework 4: Due Monday october 26.

1. Player B chooses a number $j \in \{1, 2, \ldots, n\}$ and A tries to guess what it is. If A guesses correctly then A wins 1. If A guesses too high then A loses 1. If A guesses too low there is no payoff. Solve the game.

2. Find the optimal ordering strategy for the following inventory system. If you order an amount Q, it costs AQ^α for some $0 < \alpha < 1$ and the inventory cost is I per unit per period. The demand is λ units per period and no stock-outs are allowed.

3. Show that EDD is an exact algorithm for $1 \mid r_j, pmtn \mid L_{max}$ i.e. there are n jobs with release dates $r_1, r_2, \ldots, r_n$ and due dates $d_1, d_2, \ldots, d_n$, preemption is allowed and the goal is to minimise the maximum lateness $C_j - d_j$.