Department of Mathematical Sciences
CARNEGIE MELLON UNIVERSITY

OPERATIONS RESEARCH II 21-393

Homework 2: Due Monday October 26.

Q1:
Solve the following 2-person zero-sum games:

$$
\begin{bmatrix}
6 & 2 & 4 \\
5 & 2 & 5 \\
4 & 1 & -3
\end{bmatrix}
\qquad
\begin{bmatrix}
2 & 1 & 1 & 0 & -1 \\
4 & 3 & 2 & 1 & -1 \\
1 & 1 & 0 & -1 & 1 \\
2 & 1 & 1 & -2 & -2 \\
4 & 1 & 0 & -2 & -3
\end{bmatrix}
$$

Q2:
Players A and B choose integers i and j respectively from the set $\{1, 2, \ldots, n\}$ for some $n \geq 2$. Player A wins if $|i - j| = 1$. Otherwise there is no payoff. Solve the game.

Q3:
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.