Day 1: Homework

Homework 1: Go to `https://www.economics.utoronto.ca/osborne/igt/intro.pdf` and do Exercise 5.3 and 6.1.

Homework 2:

Problems like the Grade Game are known as the "prisoner's dilemma" due to the following scenario. Imagine that two criminals are being interrogated by the police. The lawyer tells them that if one of them confesses to the crime and the other one does not, the confessor will go free and the other one will get the death penalty. If they both confess, they will get a 10 year jail term, and if they both insist they are innocent they will both only have to pay a small fine.

(a) Draw the outcome matrix of this "game". Hint: one of the entries of the matrix will be (small fine, small fine).

(b) Create a reasonable "payoff function" for this game.

(c) Draw the payoff matrix using your payoff function

(d) Is there a dominating strategy for this game? If there is, what is it?

Homework 3: Go to `https://www.economics.utoronto.ca/osborne/igt/nash.pdf` and do Exercise 14.1

Homework 4: Consider the following game. You and your opponent each put down either a red card or a black card in a pile at the same time. If the colors match, you get one dollar, and if they don't you get nothing. Your opponent gets one dollar for every red card in the pile.

(a) Draw a payoff matrix corresponding to this game.

(b) Is the best strategy to put down a red card or a black card?

(c) Does the strategy you chose in (b) strictly dominate the other one?