Econ 101 | Demo D2

Demo D2 was given as a MinExam in a previous semester.

Question 1 | Keeping House: Gryffindor

Ron and Harry share a room in the Gryffindor tower during the school year. Neither student is partial to chores, and would prefer not to tidy up their shared space. But both enjoy when the room is clean, and are more than willing to tidy the room if it means the space is neat. Their payoffs are represented by the following payoff matrix:

		Harry: Clean	Harry: Don't
Ron	Clean	2, 2	0, 3
	Don't	3, 0	1, 1

Q1.A | Best Response

Find Harry's best response.

$$BR_H = \begin{cases} C, D & \text{if } \sigma_R = C \\ D & \text{if } \sigma_R = D \end{cases}$$

Q1.B | Efficient Strategies

Which set of strategies is efficient for Ron and Harry?

Efficient Strategies: (C, C)

Part C. Nash Equilibrium

What is the Nash equilibrium?

Nash Eq.: (D, D)

Question 2 | Keeping House: Slytherin

Meanwhile in Slytherin, Malfoy and Crabbe face a similar situation. But due to their financial position, they may choose to hire a house elf to avoid the unpleasant chore of cleaning up, or avoid paying and leave their room messy. Their payoffs are given in the following table.

		Malfoy: Hire	Malfoy: Don't
Crabbe	Hire	5, 4	3, 3
	Don't	3, 4	2, 3

Q2.A | Best Response

Find Malfoy best response.

$$BR_M = \begin{cases} H & \text{if } \sigma_C = H \\ H & \text{if } \sigma_C = D \end{cases}$$

Q2.B | Efficiency

Which set of strategies is efficient for Malfoy and Crabbe?

Efficient Strategies: (H, H)

Q2. C | Nash Equilibrium

What is the Nash Equilibrium?

Nash Equilibrium: (H, H)