Game Theory: In-class Quiz 2
Fall 2024

Student ID:

Name:

Instructions

1. Do NOT flip over this page until every student received this quiz. Your TA will let you know when you can start.
2. During this closed-book quiz, you cannot consult any materials.
3. If you are unable to explain your reasoning in English, it is okay to write in Korean.
4. Should you need more spaces, use the backside of the page, with clearly indicating the relevant quiz number.

Honor Code: Cheating on exams or quizzes, plagiarizing someone else's answers as one's own, or any other instance of academic dishonesty violates the standards of academic integrity.

Confidentiality Code: Sharing the information of the exam or quiz contents with other students in any form and medium is strongly prohibited, as it raises information inequity.

I, _____, consent to the Honor Code and the Confidentiality Code.
(write your name)

1. Consider the Rock-Paper-Scissors game. Player 1 prefers to win with Rock (and feels bad to lose with Rock), so the payoff matrix is as follows:

P1 \ P2	R	P	S
R	(0,0)	(-3,1)	(3,-1)
P	(1,-1)	(0,0)	(-1,1)
S	(-1,1)	(1,-1)	(0,0)

Find a mixed-strategy Nash equilibrium. Explain how you get it.

2. Consider a partnership between two players.

- When player 1 exerts effort of x and player 2 exerts effort of y, each player receives $x + y + cxy$, where $c \in (0, 1)$.
- When exerting effort e, player 1's cost of effort is $C_1(e) = e^2$, while player 2's cost of effort is $C_2(e) = \frac{1}{2}e^2$.

Draw Best Response functions. Find a Nash equilibrium.

3. Consider the game:

P1 \ P2	W	X	Y	Z
U	(3,6)	(5,10)	(5,0)	(0,8)
M	(2,6)	(3,3)	(4,10)	(5,1)
D	(1,5)	(4,9)	(3,0)	(4,6)
B	(1,7)	(2,3)	(3,4)	(4,8)

Which pair of strategies survives the process of iterative removal of strictly dominated strategies?