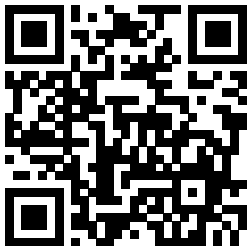# Game Theory 03-03

Exercise

Author

Oct. 21, 2025

Answer on Google Slides

Use the shared Google Slides deck to upload your answers. Summarise your reasoning and cite any references you consult.

https://sites.google.com/vju.
ac.vn/bcse-gt

Notes

▶ Record teammates who collaborated on the submission.

▶ Handwritten work is welcome—take clear photos and upload them.

		Binh	
		Work Hard	Slack Off
Anh	Work Hard	(5,5)	(2,7)
	Slack Off	(7,2)	(3,3)

1. Compute the best-response correspondences BR_{Anh} and BR_{Binh}.
2. Identify every pure Nash equilibrium of the original game.

Q2. Battle of the Sexes

Analyse the coordination problem that features two payoff-dominant activities.

		Player B	
		Opera	Football
Player A	Opera	(4,3)	(0,0)
	Football	(1,0)	(2,5)

1. Mark the best responses for each player in the table.
2. List all pure Nash equilibria.
3. Suggest a brief pre-play communication that could guide coordination.

Q3. Stag Hunt and Beliefs

Consider the assurance game and relate best responses to beliefs.

		Player B	
		Stag	Rabbit
Player A	Stag	(6,6)	(1,5)
	Rabbit	(5,1)	(3,3)

1. Find all Nash equibria.

Two depositors choose whether to Stay with the bank or Withdraw immediately.

Depositor 2

		Stay	Withdraw
Depositor 1	Stay	(4,4)	(1,3)
	Withdraw	(3,1)	(2,2)

1. Mark the best responses for each player and identify every pure Nash equilibrium.

2. Compare the payoffs at the equilibria and explain why coordination on the safe outcome can fail.

3. Propose one policy tool (e.g., deposit insurance, withdrawal limits, communication) that could make "Stay, Stay" the unique equilibrium in this variant, and justify your reasoning.

Q5. Incentivising Effort with Transfers

Using the teamwork game from Q1, suppose a contract pays 2 units from any shirker to the unique worker whenever exactly one player chooses Work Hard.

1. Write the resulting payoff matrix (net of the transfer) for all four action profiles.

2. Check whether (Work Hard, Work Hard) becomes a Nash equilibrium and whether each player is at least as well off as in the outside option payoff of 2.

3. State the verifiability and observability conditions that must hold for the transfer to be enforceable in practice.