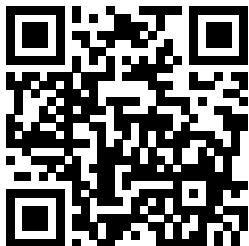# Game Theory 05-03

Exercise

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Nov. 4, 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

▶ Clear photos of handwritten work are acceptable; ensure calculations are legible.

Q1. Stag Hunt Diagnostics

Revisit the assurance game from 03-03 with players choosing Stag or Hare.

1. Evaluate Pareto efficiency and payoff dominance for (Stag, Stag) and (Hare, Hare).

2. Compute deviation losses to decide which profile is risk dominant.

3. Identify focal cues (labels, symmetry, precedent) that could coordinate play.

4. Recommend one equilibrium to a product team and justify the choice.

Q2. Designing Focal Points

Build a coordination game for setting a product launch time.

1. Provide the payoff table (or clearly describe the strategy space) for two teams selecting launch times.

2. Propose at least three focal cues (iconic times, colour coding, rituals) that could guide coordination.

3. Explain when each cue aligns with or conflicts with Pareto and risk dominance in your game.

Q3. Hotelling Location Choices

Using the Hotelling setup from 05-02, compare $(0, 1)$ with $(\frac{1}{2}, \frac{1}{2})$ for two firms.

1. Discretise locations to $\{0, \frac{1}{2}, 1\}$ and present the reduced payoff matrix you analyse.

2. Apply the Harsanyi–Selten procedure: eliminate dominated strategies, compare risk, and refine by payoffs.

3. Summarise the recommended profile from consumer, firm, and regulator perspectives, noting how zoning or subsidies could shift the result.

Q4. Cournot Output Table

For $a = 10$, $b = 1$, $c = 2$, evaluate the symmetric Cournot duopoly with $q_i \in \{0, \ldots, 8\}$.

1. Map the payoff surface and flag any quantities that are strictly dominated.

2. Mark which output pairs are payoff dominant or risk dominant within the discrete grid.

3. Discuss how a capacity cap or regulation would alter the recommended output, citing any computations you performed.