

Foundations of Game Theory

Game Theory · Answer Key · 12 Questions

1. Who is widely considered the 'father of Game Theory' and co-authored 'Theory of Games and Economic Behavior'?

- A) John von Neumann**
- B) John Nash
- C) Leonid Kantorovich
- D) Oskar Morgenstern

2. In what year was the seminal book 'Theory of Games and Economic Behavior' published?

- A) 1944**
- B) 1951
- C) 1932
- D) 1949

3. Which famous game, illustrating a conflict between rational self-interest and mutual benefit, is a central concept in Game Theory?

- A) The Prisoner's Dilemma**
- B) Rock, Paper, Scissors
- C) Chess
- D) Go

4. The concept of a 'Nash Equilibrium', a state where no player can improve their outcome by unilaterally changing their strategy, is named after which mathematician?

- A) John Nash**
- B) John von Neumann
- C) Emil Borel
- D) Alvin E. Roth

5. Which mathematician, besides John von Neumann, co-authored 'Theory of Games and Economic Behavior'?

- A) Oskar Morgenstern**
- B) John Nash
- C) Kenneth Arrow
- D) Gerard Debreu

6. The 'Minimax Theorem', which states that in a two-person zero-sum game, there is a value such that one player can guarantee a payoff of at least that value, was proven by whom?

A) John von Neumann

- B) John Nash
- C) Emil Borel
- D) Leonid Kantorovich

7. Game Theory found early applications beyond pure mathematics, notably in which field during World War II?

A) Military strategy

- B) Medicine
- C) Agriculture
- D) Literature

8. Which of these is an example of a zero-sum game, where one player's gain is exactly another player's loss?

A) Chess

- B) A business partnership
- C) A charity drive
- D) A cooperative board game

9. The development of the concept of the 'core' of a game, which represents stable outcomes that cannot be improved upon by any coalition of players, is credited to which group of mathematicians?

A) Bondareva and Shapley

- B) Nash and Von Neumann
- C) Arrow and Debreu
- D) Kreps and Wilson

10. Which Nobel Prize in Economics was awarded in part for contributions to the theory of auctions, a significant application of Game Theory?

A) 1996

- B) 1972
- C) 1983
- D) 2001

11. The concept of 'repeated games' in Game Theory explores how strategies can evolve over time through interaction. Which famous economist extensively studied this area, earning a Nobel Prize?

A) Robert Aumann

B) John Maynard Keynes

C) Milton Friedman

D) Paul Samuelson

12. In the context of Game Theory, what does 'rationality' typically imply about a player's behavior?

A) They aim to maximize their own payoff

B) They act randomly

C) They prioritize fairness above all else

D) They are influenced by emotions