

Economics Tripos Part 1 Paper 1
Microeconomics
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Supervision 6: Introduction to game theory

In addition to all of Bob Evans' suggested supervision questions (not including the bonus question), please answer the following:

1. Tripos 2007 A3

2. Tripos 2005 A9

3. Under what circumstances would an individual prefer to move second rather than first in a game?

4. Consider a game in which there is a prize worth \$30. There are three contestants A, B, and C. Each can buy a ticket worth \$15 or \$30, or not buy a ticket at all. They make these choices simultaneously and independently. Then, knowing the ticket-purchase decisions, the game organiser awards the prize. If no one has bought a ticket, the prize is not awarded. Otherwise, the prize is awarded to the buyer of the highest-cost ticket if there is only one such player, or split equally between two or three if there are ties among the highest-cost ticket buyers.

(a) Show this game in strategic form.

(b) Find all pure-strategy Nash equilibria.

5. Find the pure strategy Nash equilibrium of the following two games. In each case, which strategies will a rational player definitely not play?

		A ₂	B ₂	C ₂
(a)	A ₁	4,2	3,0	-4,1
	B ₁	1,1	1,3	3,0
	C ₁	3,-1	2,2	1,-2

		L	C	R
(b)	T	2,4	1,0	3,1
	M	-1,-1	4,2	2,0
	B	1,1	0,4	-1,0

6. Consider the following game. Two people use the following procedure to split a pound. Person 1 makes person 2 an offer. If person 2 accepts this offer, then person 1 receives the remainder. If person 2 rejects the offer, then neither person receives any money.

(a) What is meant by a Nash equilibrium of this game?

(b) Carefully describe the Nash equilibria of this game.