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Courses » Strategy: An Introduction to Game Theory

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Unit 2 - Week 1

Course outline

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Week 1

- Introduction Examples: Markets/ Politics/ Auctions
- Prisoners' Dilemma
- Best Response and Nash Equilibrium
- Another Example: Markets
- Dominant Strategies
- Stag Hunt – Coordination and Bank Runs
- Battle of Sexes and Multiple Nash Equilibria
- Quiz : Assignment-1

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Assignment-1

The due date for submitting this assignment has passed. **Due on 2017-02-07, 23:59 IST**
As per our records you have not submitted this assignment.

A war of attrition: Two players P_1 and P_2 are involved in a dispute over an object. The values of the object to P_1 and P_2 are $v_1 = 20$, $v_2 = 15$ respectively. Each player chooses when to concede the object to the other player. If the earliest player to concede does so at time t , the other player obtains the object at that time. If player i concedes earliest, at time t_i , her payoff is $-2t_i$ and payoff of player j is $v_j - 2t_i$. If both players concede simultaneously at time t , the object is split equally between them, player i receiving a payoff of $\frac{v_i}{2} - 2t$. Consider the possible conceding times as t belonging to the set $\{0, 5, 10, 20\}$ i.e. each player can concede at either 0, 5, 10 or 20. Formulate this as a strategic game and answer the questions below

1) 1. The value of $u_1(5,10)$ is

1 point

- 10
- 5
- 5
- 10

No, the answer is incorrect.
Score: 0

Accepted Answers:
-10

2) 2. The value of $u_2(10,10)$ is

1 point

- 15
- 12.5
- 2.5
- 5

No, the answer is incorrect.
Score: 0

Accepted Answers:
-12.5

3) 3. If player 2 gives up at $t_2 = 5$, what is the best response of player 1?

1 point

- 0
- 5
- 10
- Any of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:

10

4) 4. If player 1 gives up at $t_1 = 10$, what is the best response of player 2?

1 point

- 0
- 5
- 10
- 20

No, the answer is incorrect.**Score: 0****Accepted Answers:**

0

5) 5. Which of the below outcomes is a Nash equilibrium of the game ?

1 point

- (5,20)
- (0,10)
- (10,5)
- (20,10)

No, the answer is incorrect.**Score: 0****Accepted Answers:**

(0,10)

All-Pay Auction: Consider the following simple all-pay auction scenario. Two individuals, player 1 and player 2 are competing in an auction to obtain a valuable object. Each player bids in a sealed envelope without knowing the bid of the other player. The bids must be multiples of 10 and the maximum they can bid is 50. A bid of 0 is also acceptable. The object is worth 40 to player 1 and 30 to player 2. The highest bidder wins the object. In case of a tie player 1 gets the object. Answer the questions below

6) 6. The values of $u_1(10,20)$, $u_2(10,10)$ respectively are

1 point

- 10,10
- 10,-10
- 10,-10
- 10,20

No, the answer is incorrect.**Score: 0****Accepted Answers:**

-10,-10

7) 7. The values of $u_2(40,20)$, $u_1(30,40)$ respectively are,

1 point

- 20,-10
- 10,-20
- 10,-30
- 10,-30

No, the answer is incorrect.**Score: 0****Accepted Answers:**

-10,-30

8) 8. What is a best response of player 2 to bid 30 of player 1

1 point

- 0
- 10
- 20
- All of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

0

9) 9. What is a best response of player 1 to bid 20 of player 2

1 point

- 10
- 20
- 30
- 40

No, the answer is incorrect.

Score: 0

Accepted Answers:

20

10) 10. Which of the following is a Nash equilibrium of the game above

1 point

- 40,30
- 10,20
- 20,20
- None of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

None of the above



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Funded by

Government of India
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