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NPTEL

reviewer2@nptel.iitm.ac.in ▼

Courses » Strategy: An Introduction to Game Theory

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Unit 3 - Week 2

Course outline

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Week 1

Week 2

- Tragedy of Commons
- Tragedy of Commons
- Cournot Duopoly
- Cournot Duopoly
- Mixed Strategies
- Battle of Sexes
- Battle of Sexes: Best Response Dynamic
- Paying Taxes
- Portfolio Management Game
- Quiz : Assignment 2

Week 3

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Assignment 2

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.

Consider a modified battle of sexes game in which boy and girl who are players 1, 2 respectively can choose C, H. The various payoffs

1) A pure strategy Nash equilibrium of the game above is

1 point

- (C, C)
- (H, H)
- Neither of above
- Both of above

No, the answer is incorrect.**Score: 0****Accepted Answers:***Neither of above*

2) If boy is mixing C, H with probabilities $\frac{1}{4}$, $\frac{3}{4}$, what are the payoffs to the girl for the pure strategies C, H respectively

1 point

- 2,5/2
- 5/2,3
- 3,7/2
- 7/2,4

No, the answer is incorrect.**Score: 0****Accepted Answers:***5/2,3*

3) If girl is mixing C, H with probabilities $\frac{1}{3}$, $\frac{2}{3}$, what are the payoffs to the Boy for the pure strategies C, H respectively

1 point

- 4, 2
- 7/2, 5/2
- 9/2,3/2
- 3, 5

No, the answer is incorrect.**Score: 0****Accepted Answers:***4, 2*

4) What are the mixed strategies employed by the boy and the girl at the Nash equilibrium

1 point

- $((\frac{1}{2}, \frac{1}{2}), (\frac{1}{2}, \frac{1}{2}))$
- $((\frac{1}{6}, \frac{5}{6}), (\frac{2}{3}, \frac{1}{3}))$
- $((\frac{1}{3}, \frac{3}{4}), (\frac{3}{4}, \frac{1}{4}))$
- $((\frac{2}{3}, \frac{1}{3}), (\frac{1}{3}, \frac{2}{3}))$

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

$$((\frac{1}{6}, \frac{5}{6}), (\frac{2}{3}, \frac{1}{3}))$$

5) What are the payoffs to the boy and girl at the mixed strategy Nash equilibrium

1 point

- 8/3, 8/3
- 2, 8/3
- 3,3
- 3, 8/3

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

$$3, 8/3$$

Consider the game table for the soccer penalty kick game shown below. The kicker is the row player who can choose from kicking either to the Left (L), Middle (M) or Right (R) while the goal keeper is the column player who can choose between diving to the left (l) or right (r). Answer the questions that follow.

6) Consider the goal keeper mixing l, r with probabilities q, 1-q. If $q \leq \frac{1}{2}$ what is the best response of the kicker

1 point

- L
- M
- R
- None of the above.

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

L

7) Consider the goal keeper mixing l, r with probabilities q, 1-q. If $q \geq \frac{1}{2}$ what is the best response of the kicker

1 point

- L
- M
- R
- None of the above.

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

R

8) Consider the goal keeper mixing l, r with probabilities q, 1-q. Which is the action of the kicker which is never a best response for any value of q? **1 point**

- L
- M
- R
- None of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

M

9) Remove the action of the kicker which is never a best response for any value of q . In this reduced game table, if the goal keeper is mixing the l, r with probabilities $1/3$, $2/3$. what are the payoff to the kicker for choosing the rest of the actions? 1 point

- $15/3, 19/3$
- $19/3, 11/3$
- $22/3, 17/3$
- $8/3, 14/3$

No, the answer is incorrect.

Score: 0

Accepted Answers:

$22/3, 17/3$

10) Remove the action of the kicker which is never a best response for any value of q . In this reduced game table, what is the mixed strategy Nash equilibrium? 1 point

- $((\frac{2}{3}, \frac{1}{3}), (\frac{1}{3}, \frac{2}{3}))$
- $((\frac{2}{3}, \frac{1}{3}), (\frac{1}{2}, \frac{1}{2}))$
- $((\frac{1}{2}, \frac{1}{2}), (\frac{2}{3}, \frac{1}{3}))$
- $((\frac{1}{2}, \frac{1}{2}), (\frac{1}{2}, \frac{1}{2}))$

No, the answer is incorrect.

Score: 0

Accepted Answers:

$((\frac{1}{2}, \frac{1}{2}), (\frac{1}{2}, \frac{1}{2}))$

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