Practice Quiz: Extensive-form games (not assessed)

Due No due date **Points** 10 **Questions** 6 **Time Limit** None
Allowed Attempts Unlimited

Take the Quiz Again

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	less than 1 minute	0 out of 10 *

* Some questions not yet graded

Submitted Jun 6 at 13:00

Unanswered

Question 1

0 / 1 pts

Extensive-form games differ to normal-form games in which of the following ways (only one answer is correct)?

- Their Nash equilibria are extensive
- Their Nash equilibria are never unique
- They do not have a Nash equilibrium

orrect Answer

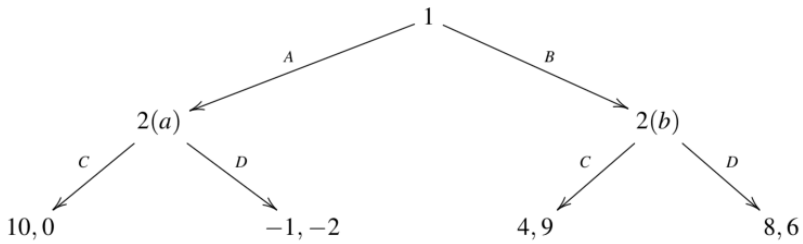
- The allow sequential moves

Unanswered

Question 2

0 / 5 pts

Consider the following abstract extensive-form game of two players, 1 and 2, each with two available moves.



Select the right answers for the following:

What move will player 1 make: [Select]

What move will player 2 make: [Select]

What is the equilibrium of the sub-game starting at node 2(a): [Select]

What is the equilibrium of the sub-game starting at node 2(b): [Select]

What is the equilibrium of the game starting at node 1: [Select]

Answer 1:

ou Answered (You left this blank)

orrect Answer A

Answer 2:

ou Answered (You left this blank)

orrect Answer C

Answer 3:

ou Answered (You left this blank)

orrect Answer 10, 0

Answer 4:

ou Answered (You left this blank)

orrect Answer 4, 9

Answer 5:

ou Answered (You left this blank)

orrect Answer 10, 0

Sub-game 2(a): Player 2 prefers a pay-off of 0 rather than -2, so will select C and the equilibrium is 10, 0

Sub-game 2(b): Player 2 prefers a pay-off of 9 rather than 6, so will select C and the equilibrium is 4, 9

Game 1: Player 1 prefers a pay-off of 10 over 4, so will select A and the equilibrium is 10, 0

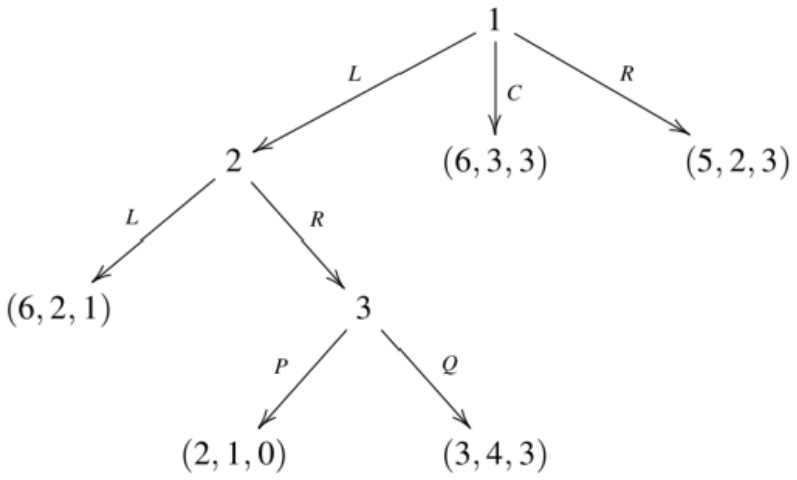
Although a extensive-form game, Player 2 still has a dominant strategy of C: it is the best response in both sub-games.

Unanswered

Question 3

0 / 3 pts

Consider the following abstract game consisting of three players. The numbers in the nodes refer to the player number:



Select the right answers for the following:

What is the sub-game perfect equilibrium for sub-game 3: [Select]

What is the sub-game perfect equilibrium for sub-game 2: [Select]

What is the sub-game perfect equilibrium for the entire game: [Select]

Answer 1:

ou Answered (You left this blank)

orrect Answer (3, 4, 3)

Answer 2:

ou Answered (You left this blank)

orrect Answer (3, 4, 3)

Answer 3:

ou Answered (You left this blank)

orrect Answer (6, 3, 3)

The only catch here is to remember the order of the players! Player 3 has the choice at sub-game 3, and their pay-off is in the third element of the tuple.

Player 3 prefers a pay-off of 3 over 0, so they prefer move Q and therefore the equilibrium is (3, 4, 3)

Now, player 2 has to choose between (6, 2, 1) and the sub-game perfect equilibrium of the sub-game starting at node 3, which is (3, 4, 3). Player 3 prefers a pay-off of 4 over 2, so prefers move R over L, and therefore the equilibrium is (3, 4, 3).

Finally, player 1 has to choose between the sub-game perfect equilibrium of the sub-game starting at node 2, which is (3, 4, 3), and the other two outcomes: (6, 3, 3) and (5, 2, 3). Player 1 prefers a pay-off of 6 over 5, so prefers move C, and the sub-game perfect equilibrium of the entire game is (6, 3, 3).

Unanswered

Question 4

0 / 1 pts

True or false: model-free reinforcement learning cannot be applied in game theory because it is model-free and game-theory would require a model of other players?

- True

orrect Answer

- False

Model-free reinforcement learning can be applied by exploring and exploiting actions and treating the other agents' actions as uncertain outcomes of our own agent's actions.

Unanswered

Question 5

0 / 0 pts

That is the last of the video-based lecture format for this semester. In week 12, we'll be looking at some revision and doing a live lecture.

Please rate your learning experience in the format of the subject since week 7 using video playlists accompanied by notes and quizzes, with 1 being the lowest and 5 being the highest.

Sorry about the randomised ordering of the answers -- this is a Canvas setting :)

orrect Answer
- [ ] 2

orrect Answer
- [ ] 4

orrect Answer
- [ ] 5

orrect Answer
- [ ] 3

orrect Answer
- [ ] 1

Unanswered

Question 6

Not yet graded / 0 pts

Please let me know if you have any comments on your learning experience.

Your Answer: