

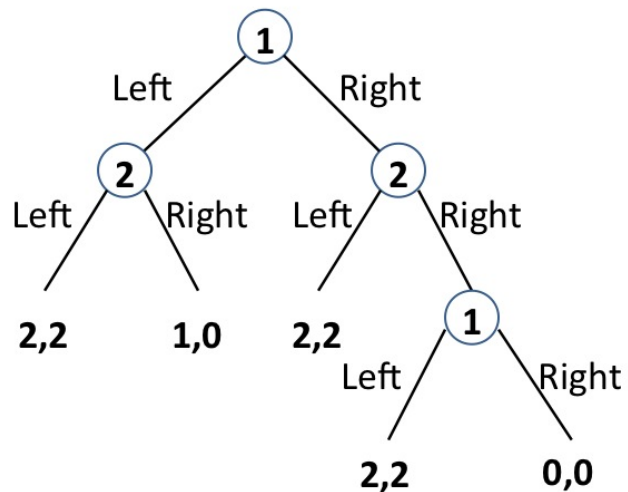
## Feedback — In-Video Quizzes Week 4

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You submitted this quiz on **Sun 3 Feb 2013 10:24 AM PST**. You got a score of **5.00** out of **5.00**.

### Question 1

4-3 Perfect Information Extensive Form: Strategies, BR, NE



What is the number of pure strategies that each player has:

Your Answer

Score

Explanation

☐ a) Both have 2 strategies.

☒ b) Both have 4 strategies.



1.00

☐ c) Player 1 has 2, and player 2 has 4.

☐ d) Player 1 has 3, and player 2 has 4.

Total

1.00 / 1.00

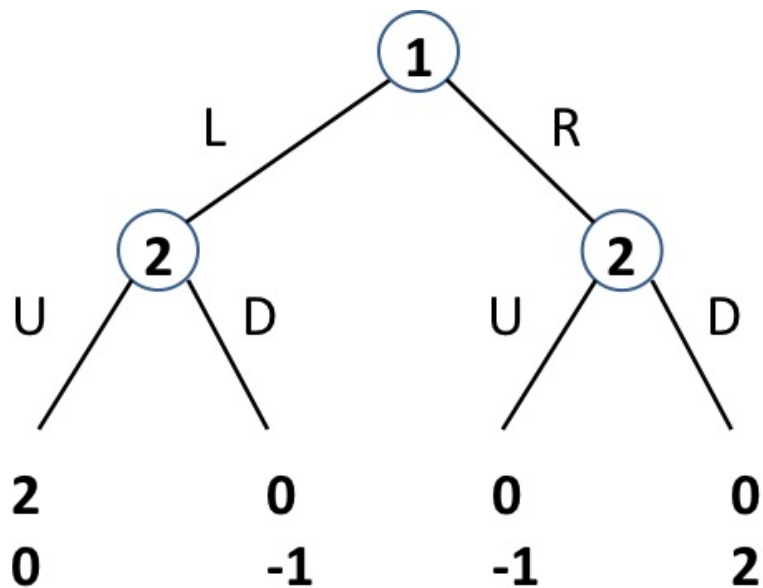
### Question Explanation

(b) is true.

- Each player has two decision nodes and in each decision node there are two possible actions: Left or Right.
- Thus, players 1 and 2 both have 4 pure strategies:
  - Left, Left;
  - Left, Right;
  - Right, Left;
  - Right, Right;

## Question 2

### 4-4 Subgame Perfection



How many subgames are in this game? Which is a subgame perfect equilibrium?

Your Answer

Score

Explanation

- ☐ a) There are 1 subgames; (L), (U,D);
- ☐ b) There are 1 subgames; (L), (U,U);
- ☒ c) There are 3 subgames; (L), (U,D);
- ☐ d) There are 3 subgames; (L), (U,U).



1.00

Total

1.00 / 1.00

### Question Explanation

(c) is true.

- There are 3 subgames: the original game and two single-player subgames (both nodes in which 2 has to decide between U and D).
- In the subgame following 1 choosing L, it is (uniquely) optimal for 2 to choose U; in the subgame such that 1 chooses R, it is (uniquely)

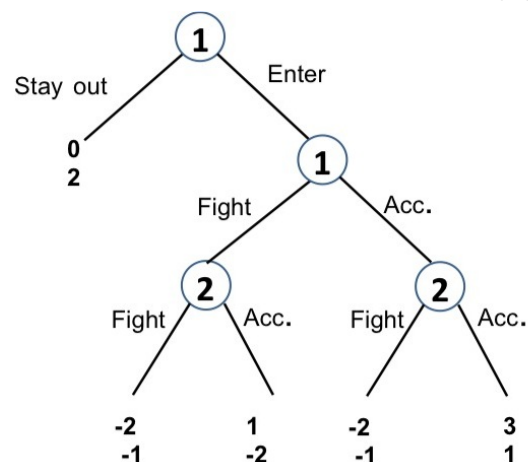
optimal for 2 to choose D.

- Then 1 prefers L leading to (2, 0) to R leading to (0, 2).

## Question 3

### 4-5 Backward Induction

Consider a modified version of the entry game:



Which is the backward induction solution of this game? [Here (Enter, Fight), (Fight, Acc.) indicates that player 1 chooses Enter at the first decision node and Fight at the second decision node, and 2 chooses Fight at the left node and Accommodate at the right node.]

#### Your Answer

#### Score

#### Explanation

- ☐ a) (Enter, Acc.), (Fight, Fight).
- ☐ b) (Enter, Fight), (Acc., Acc.).
- ☐ c) (Stay out, Acc.), (Fight, Acc.).
- ☒ d) (Enter, Acc.), (Fight, Acc.).



1.00

Total

1.00 / 1.00

**Question Explanation**

(d) is true.

- (a) and (b) cannot be the answer:
  - If 1 plays Fight, 2 prefers to Fight;
  - If 1 plays Acc., 2 prefers to Acc.;
  - Thus, the backward induction solution requires 2 playing (Fight, Acc.)
- Since 2 plays (Fight, Acc.), 1 prefers to Acc. than Fight (payoff of Acc. is 3 and payoff of Fight is -2).
- If 1 enters, he knows that by backward induction he will receive 3. This is better than 0, the outcome of staying out.

## Question 4

### 4-6 Subgame Perfect Application: Ultimatum Bargaining

Consider the modified game:

- Player A makes an offer  $x$  in  $0, 1, \dots, 10$  to player B;
- Player B can accept or reject;
- A gets  $10 - x$  and B gets  $x$  if accepted;
- If rejected, player A gets 0 and player B gets a punishment of **-1**.

Which is a possible outcome (payoff to players A,B) from backward induction?

**Your Answer****Score****Explanation**
☐ a) (9, 1).

☐ b) (5, 5).

☐ c) (0, -1).

☒ d) (10, 0).



1.00

Total

1.00 / 1.00

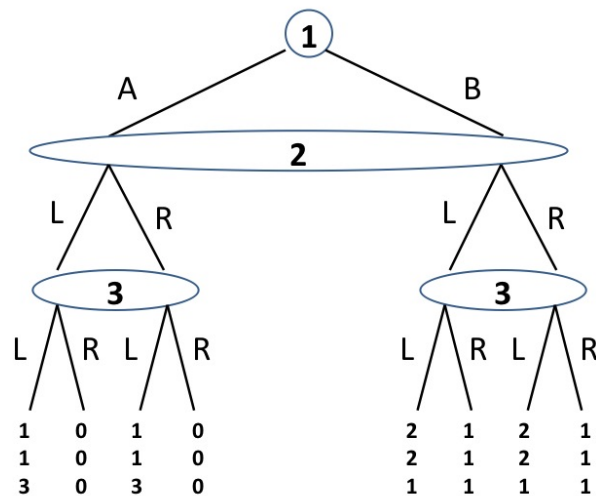
### Question Explanation

(d) is true.

- In the subgame, it is optimal for B to accept always since by accepting B guarantees a payoff of at least 0, which is larger than the payoff of rejecting (-1).
- (a) and (b) cannot be backward induction outcomes, because A could offer 0 and get a payoff of 10 (since B always accepts).
- (c) cannot be a backward induction outcome since it corresponds to the outcome when B rejects.
- Thus, (d) is the **only** backward induction outcome.

## Question 5

### 4-8 Imperfect Information Extensive Form: Definition, Strategies



What is player 3's knowledge of player 1's choice:

**Your Answer****Score****Explanation**

- ☐ a) Player 3 knows nothing.
- ☐ b) Player 3 knows only player 2's choice, but not player 1's choice.
- ☒ c) Player 3 knows whether it is A or not.



1.00

Total

1.00 / 1.00

**Question Explanation**

c) is true.

- From the figure, after 1 makes a choice, 3 knows whether the choice is A or not, but cannot distinguish player 2's choice, whether it was L or R, since they lead to the same information set of player 3.