In-Video Quizzes Week 1
Practice Quiz, 7 questions

6/7 points (85.71%)

✓ **Congratulations! You passed!**

<div>Next Item</div>

✓ 1 / 1
point

1.
Consider the following normal form:

Player 1\ Player 2	Movie	Theater
Movie	a,b	0,0
Theater	0,0	c,d

- N={1, 2}
- A_i={Movie, Theater} Each player chooses an action of either going to a movie or going to the theater.
- Player 1 prefers to see a movie with Player 2 over going to the theater with Player 2.
- Player 2 prefers to go to the theater with Player 1 over seeing a movie with Player 1.
- Players get a payoff of 0 if they end up at a different place than the other player.

Which restrictions should a, b, c and d satisfy?

- ○ a) $a > c, b > d$;

- ○ b) $a > d, b < c$;

- ○ c) $a > c, b < d$;

Correct
(c) is true.

- Since Player 1 prefers to seeing a movie over going to the theater, then Player 1's payoff under (Movie, Movie) has to be larger than the payoff under (Theater, Theater). Thus, $a > c$.

- Since Player 2 prefers to go to the theater over seeing a movie, then Player 2's payoff under (Theater, Theater) has to be larger than the payoff under (Movie, Movie). Thus, $b < d$.

- ○ d) $a < c, b < d$;

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2.

Consider the following constant-sum game:

	H	T
H	1,-1	
T		0,?

What should be filled in ?:

○   a) -1;

○   b) 0;

Correct
(b) is true.

- In a constant-sum game, there is a constant k such that $u_1(a_1, a_2) + u_2(a_1, a_2) = k$, for all possible (a_1, a_2).
- We know $u_1(H, H) = 1$ and $u_2(H, H) = -1$, thus $k = 1 + (-1) = 0$.
- Thus $? = u_2(T, T) = k - u_1(T, T) = 0 - 0 = 0$.

○   c) 1;

○   d) 2.

✔   1 / 1 point

3.

n people guess an integer between 1 and 100, and the winner is the player whose guess is closest to the mean of the guesses + 1 (ties broken randomly). Which of the following is an equilibrium:

○   a) All announce 1.

○   b) All announce 50.

○   c) All announce 75.

○   d) All announce 100.

Correct
(d) is true.

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- Each player's best response is to announce a number closest to the average + 1, subject to the constraint of the 100.

- So, each person wants to name a number above average, and so nothing is stable except all saying 100.

- They cannot announce more than 100, and that is then an equilibrium.

✔ 1 / 1
   point

4.

Consider the collective-action game:

Player 1\ Player 2	Revolt	Not
Revolt	2,2	-1,1
Not	1,-1	0,0

When player 1 plays "Not", for player 2

○ a) "Revolt" is a best response.

◉ b) "Not" is a best response.

Correct
(b) is true.

- When player 1 plays "Not", player 2 gets -1 from "Revolt" and 0 from "Not". Thus "Not" is a best response.

- No strategy is a dominant strategy:

- When the other player plays "Not", it is strictly better to play "Not";

- When the other player plays "Revolt", it is strictly better to play "Revolt";

- No strategy always dominates the other strategy.

○ c) "Revolt" and "Not" are both best responses.

○ d) There is no best response.

✘ 0 / 1
   point

5.

Consider the following game in which two firms must decide whether to open a new plant or not:

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Firm 1\ Firm 2	Build	Not
Build	1,1	3,0
Not	0,3	2,2

Find all pure strategy Nash equilibrium:

○ a) Only (Build, Not).

⊘ b) Only (Not, Not).

▲

This should not be selected

○ c) Only (Build, Build).

○ d) Only (Not, Build).

✔ 1 / 1
point

6.
Consider the game:

Player 1\ Player 2	Left	Right
Up	2,1	1,1
Down	0,1	0,2

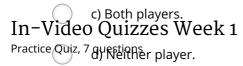Which of the players has a strictly dominant strategy?

○ a) Player 1.

▲

Correct
(a) is true.

- "Up" is a strictly dominant strategy for player 1 because

- When player 2 plays Left, player 1 gets 2 from Up and 0 from Down (Up is strictly better); When player 2 plays Right, player 1 gets 1 from Up and 0 from Down (Up is strictly better).

- Player 2 does not have a strictly dominant strategy, only a very weakly dominant strategy.

- When player 1 plays Up, player 2 gets 1 from either Left or Right (so is indifferent); When player 1 plays Down, player 2 gets 1 from Left and 2 from Right (Right is strictly better.).

○ b) Player 2.

○ c) Both players.

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○ d) Neither player.

✔ 1 / 1
point

7.
Consider the game:

Player 1\ Player 2	Left	Right
Left	3,3	1,1
Right	1,4	1,1

Which of the following outcomes is Pareto-optimal? (click all that apply: There might be more than one, or none.)

☑ a) (3,3);

Correct
(a) and (b) are Pareto-optimal.

- Checking that (a) and (b) are Pareto-optimal:

- Neither outcome is Pareto-dominated by (1,1).

- Also, (a) does not Pareto-dominate (b) and vice versa (in (a) one player is strictly better off and the other player is strictly worse off than in (b)).

- (c) can't be Pareto-optimal since is it Pareto-dominated by (a) and (b)

- At least one player is strictly better off and the remaining player is at least indifferent between both outcomes.

☐ c) (1,1);

Un-selected is correct

☑ b) (1,4);

Correct
(a) and (b) are Pareto-optimal.

- Checking that (a) and (b) are Pareto-optimal:

- Neither outcome is Pareto-dominated by (1,1).

- Also, (a) does not Pareto-dominate (b) and vice versa (in (a) one player is strictly better off and the other player is strictly worse off than in (b)).

- (c) can't be Pareto-optimal since is it Pareto-dominated by (a) and (b)

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- At least one player is strictly better off and the remaining player is at least indifferent between both outcomes.